

## Oral Abstracts

## A. ABORIGINAL/FIRST NATIONS CANCER CARE

## 747 | Inuusinni Aqqusaagtara: An Inuit Cancer Project

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**Background/rationale or Objectives/purpose:** Cancer is a leading cause of death among Inuit populations. Compared to the general population of Canada, Inuit have a higher incidence of cancer. Pauktuutit Inuit Women of Canada is developing culturally appropriate cancer awareness tools to support community health representatives, health care providers and Inuit cancer patients.

**Methodology or Methods:** Pauktuutit and the Canadian Cancer Society are working together to develop meaningful ways to support better health across Inuit populations. Inuusinni Aqqusaqtara - My Journey – is a suite of cancer resources developed for Inuit patients, caregivers, and health care providers with the aim of helping increase patient health literacy and understanding of the disease, their diagnosis and treatment. Along with existing multilingual cancer glossary, personal journal and information booklet, two new e-learning modules have also been created. One module engages patients and caregivers through videos, what to expect during the cancer journey and other helpful information. The other engages health care providers on cultural sensitivity, how to include the Inuit cancer resources into their practice and other key learnings.

**Impact on practice or Results:** The goal is to increase knowledge about cancer, to improve communication between Inuit cancer patients and non-Inuit health care providers, helps to dispel fear of cancer, enhance support services, promote mental wellness for newly diagnosed Inuit cancer patients, and improve overall quality of life of Inuit communities.

**Discussion or Conclusions:** Pauktuutit's cancer resources are working to build cancer literacy, increase screening rates, encourage lifestyle changes to reduce cancer incidence and develop platforms for support at every stage of the cancer journey for cancer patients, caregivers and health practitioners.

## 545 | The structural challenges and concerns of racism causing distress for First Nations cancer patients- How do we achieve Truth and Reconciliation in oncology care?

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**Background/rationale or Objectives/purpose:** Objectives/Purpose: Distress experienced by cancer patients is often associated with the disease and

cancer treatments. Screening for distress is endorsed as the 6<sup>th</sup> vital sign in Canada as a means to proactively engage cancer patients in identifying their cancer distress for improved symptom management. This presentation will focus on the evaluation of the Mobile Interactive Symptom Assessment and Collection (mISAAC) pilot project where First Nations cancer patients were to complete a symptom report when a home visit was done by a health care provider.

**Methodology or Methods:** Methods: The research protocol was approved by the Anishinaabek research review committee (September 2017) and the hospital research ethics board (October 2017). A total of six focus groups were conducted from December 2017 to February 2018 with three of the four pilot sites implementing mISAAC; one focus group with patients (n = 5), three focus groups with health care professionals (n = 23) and two focus groups with Elders/Traditional Healer (n = 10).

**Impact on practice or Results:** Results: Feedback received from the focus groups went beyond the project of symptom screening and management. Concerns were raised about the structural challenges and issues of racism that amplify distress during the cancer journey in addition to the normal stressors experienced with a cancer diagnosis.

**Discussion or Conclusions:** Conclusion/Clinical implications: The Truth and Reconciliation Commission of Canada released a report in 2015 with a call to action with recommendations. Psychosocial oncology programs across Canada are poised to strategically plan and advocate to improve cancer care for First Nations cancer patients based on these recommendations.

## 492 | Understanding the importance of belonging and connection to the wellbeing of Indigenous Australians: Yarning circles and interviews with Indigenous Australians

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**Background/rationale or Objectives/purpose:** There are growing concerns that existing measures of wellbeing commonly used in cancer care do not index aspects of life that are relevant to Indigenous people. Using wellbeing tools that are not culturally-relevant to the target population have questionable value to cancer research, policy, and practice. We aimed to describe the perspectives of Indigenous Australians on what comprises wellbeing to inform the development of a culturally-appropriate measure of wellbeing for this population.

**Methodology or Methods:** We conducted 37 yarnning circles and 6 interviews with 359 Indigenous Australian adults to explore concepts of wellbeing. We used purposive sampling to ensure diversity in gender, age and geography. A thematic analysis was led by six Indigenous Australian researchers and guided by an Indigenous Advisory Group.

**Impact on practice or Results:** Despite great diversity among Indigenous Australians, our analysis revealed a common centrality of belonging and connection with family, community, and culture to individuals'

sense of wellbeing. While other components of wellbeing emerged, this presentation focuses on the importance of belonging and connection, due to its particular relevance to cancer care. A strong sense of belonging and connection reinforces social and emotional strength and support and fortifies Indigenous identity and pride.

**Discussion or Conclusions:** Including aspects of life such as belonging and connection in wellbeing measures, which are relevant to and value by Indigenous Australians, will enable better informed decision-making and patient-centred care provision for Indigenous people with cancer. There is scope for clinicians to harness the wellbeing benefits of a strong sense of belonging and connection to advance Indigenous cancer patients' coping and healing.

## 211 | Aboriginal and Torres Strait Islander People's Domains of Wellbeing: A Comprehensive Literature Review

*Tamara Butler<sup>1</sup>, Kate Anderson<sup>1</sup>, Gail Garvey<sup>1</sup>, Joan Cunningham<sup>1</sup>, Julie Ratcliffe<sup>2</sup>, Allison Tong<sup>3</sup>, Lisa Whop<sup>1</sup>, Alan Cass<sup>1</sup>, Michelle Dickson<sup>1</sup>, Kirsten Howard<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** There are significant disparities in cancer outcomes between the world's Indigenous and non-Indigenous peoples. Given these disparities, it is critical that quality of life (QOL) and wellbeing can be meaningfully measured; however, conventional QOL instruments often do not include all dimensions of wellbeing relevant to Indigenous people and their holistic understandings of wellbeing. The objective of the comprehensive literature review was to identify the domains of wellbeing relevant to Aboriginal and Torres Strait Islander people in Australia (hereafter, respectfully referred to collectively as Indigenous Australians).

**Methodology or Methods:** We searched PsycINFO, MEDLINE, Econlit, CINAHL, and Embase (from inception to June 2017, and updated in March 2019), and grey literature sources using keywords relating to adult Indigenous Australians' QOL and wellbeing. From 278 full-text articles assessed for eligibility, 95 were included in a thematic analysis.

**Impact on practice or Results:** This synthesis revealed several interconnected wellbeing dimensions: autonomy, empowerment and recognition; family and community; culture, spirituality and identity; Country; basic needs; work, roles and responsibilities; education; physical health; and mental health.

**Discussion or Conclusions:** The findings reveal a range of wellbeing domains relevant to Indigenous Australians; these domains may be shared with Indigenous populations globally. The findings indicate that in order to ensure meaningful wellbeing measurement, there is a need for a tailored wellbeing instrument that includes factors relevant to Indigenous Australians. Such an instrument will contribute to the development of culturally-appropriate outcome measures across a range of illnesses, including cancer. Moreover, ensuring the instrument can be used in economic evaluations will enable effective translation of research into practice and policy.

## 209 | Traditional and Complementary Medicine: Perspectives of Indigenous Australian Women Undergoing Cancer Investigation and their Cancer Care Providers

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**Background/rationale or Objectives/purpose:** Traditional and Complementary Medicine (T&CM) is increasingly used by cancer patients

alongside conventional treatment. Given the potential risks and benefits of T&CM to cancer patients, doctor-patient communication is critically important. Little is known about T&CM use by Indigenous cancer patients. This study explored T&CM use and disclosure among Indigenous women undergoing gynaecological cancer investigation and cancer care providers for this patient group.

**Methodology or Methods:** Fourteen Indigenous women undergoing hospital-based gynaecological cancer investigations completed the R-I-CAM-Q survey to determine T&CM use. Semi-structured interviews were conducted with these women and 18 cancer care providers. Data were analysed using frequencies and proportions and thematic analysis.

**Impact on practice or Results:** Most (86%) women reported having used T&CM, however, only 36% of women disclosed this to their care providers. Indigenous care providers demonstrated greater knowledge of T&CM than non-indigenous providers and those with little T&CM knowledge rarely asked patients about T&CM use. Care providers described creating a trusting environment and building rapport with Indigenous patients as important to discussing patients T&CM use.

**Discussion or Conclusions:** Identifying strategies to foster communication about T&CM between Indigenous cancer patients and their cancer care providers is required.

## 204 | Identifying the supportive care needs of carers of Indigenous peoples with cancer in Australia, Canada, New Zealand and the United States: A systematic review

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**Background/rationale or Objectives/purpose:** Caregivers provide critical unpaid support to Indigenous cancer patients, yet they rarely receive information or training for this role and may themselves benefit from support services. Regardless of their own cultural background, caregivers of Indigenous cancer patients must also navigate the interactions between Western biomedical approaches to cancer care and Indigenous peoples' holistic views of wellbeing. Currently, little is known how best to support caregivers and what their needs are in caring for Indigenous cancer patients. The aim of this systematic review was to identify the supportive care needs of caregivers of Indigenous peoples with cancer in Australia, New Zealand, Canada and the United States.

**Methodology or Methods:** We systematically searched PsycINFO, MEDLINE, CINAHL, Embase, Scopus and Web of Science using keywords relating to Indigenous populations in Australia, Canada, New Zealand, and the United States; caregivers; and cancer. Data was extracted from original qualitative research articles published before November 2018.

**Impact on practice or Results:** Our analysis highlights key caregiver support needs including: caregiver's knowledge and understanding of cancer; sharing caregiver responsibilities; spirituality and rituals; awareness of service availability (especially respite services); communication between family and with health care services; financial support; and access to culturally-appropriate care.

**Discussion or Conclusions:** The findings indicate the need for a supportive care needs tool for caregivers of Indigenous cancer patients. These carers have multiple support needs and it is important to their wellbeing that these needs are appropriately identified and addressed. Ultimately, understanding the supportive care needs of caregivers of Indigenous cancer patients will contribute to improving health outcomes for Indigenous cancer patients.

## 202 | A Scoping Review of Access to Cancer Care among Indigenous Peoples in Canada: Implications for Clinical Practice

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**Background/rationale or Objectives/purpose:** The inequities in access to healthcare experienced by Indigenous peoples in Canada are startling given Canada's publicly funded and 'equally accessible' healthcare system. However, little is known about access to cancer care, and barriers to accessing cancer care in particular. A scoping study was conducted to identify what is known about barriers to accessing cancer care among Indigenous peoples in Canada, and where along the cancer continuum (screening, diagnosis, treatment, etc.) these barriers are encountered.

**Methodology or Methods:** SCOPUS, EBSCOhost, Google Scholar, Ovid MEDLINE and Ovid EMBASE were searched for studies published between 1996 and 2018 that examined access to cancer care for Indigenous peoples in Canada. 36 studies met inclusion criteria and were included in our analysis.

**Impact on practice or Results:** Indigenous peoples in Canada face barriers to accessing care at the individual patient or healthcare provider (HCP) level, at the systems level, and at the structural level. Poor communication between HCP and patients, and between healthcare settings (primary and specialty care) constituted barriers to accessing care. Histories of trauma and abuse among patients, and subsequent distrust of healthcare providers, were significant barriers to accessing cancer care. Poor understanding of and lack of attention to socioeconomic conditions, historical trauma and structural violence among HCP and within healthcare settings were also linked to inequitable access to cancer care.

**Discussion or Conclusions:** Indigenous peoples in Canada face unique barriers in accessing cancer care. Increased use of cultural safety and trauma-violence informed care perspectives in clinical practice may improve access to care among Indigenous peoples and other marginalized populations.

## 183 | Indigenous Australians' Experience of Cancer Care in the Northern Territory

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**Background/rationale or Objectives/purpose:** Despite advances in cancer detection and treatment, Indigenous Australians continue to experience significantly poorer cancer outcomes than non-Indigenous Australians. Reasons for this disparity are complex; however, barriers to accessing and engaging with cancer treatment have been identified as possible drivers. Indigenous Australians living in the Northern Territory face additional challenges accessing cancer services due to geographic isolation and language and cultural differences. This study explored Indigenous Australian people's experience of cancer care at a major metropolitan hospital in the Northern Territory – particularly focusing on the factors impacting access to and engagement with treatment.

**Methodology or Methods:** Indigenous adults attending the hospital for cancer care were invited to participate in interviews conducted by a trained researcher to explore patients' experiences of cancer care. Thematic analysis was undertaken to identify the factors that impact on patients' ability to access and engage with cancer treatment

**Impact on practice or Results:** Seventy-five patients were interviewed. Thematic analysis identified that patients often missed appointments due to transport issues, family and community responsibilities back home and miscommunication with care providers. They also reported significant unmet needs, including lack of psychosocial support, finan-

cial stress, inappropriate accommodation, and lack of culturally-appropriate cancer information. The shock and stress of treatment was often overlaid by worries about family back home.

**Discussion or Conclusions:** This study identified significant challenges facing Indigenous people in the Northern Territory accessing and engaging with cancer care. The findings offer valuable information regarding how cancer services can adapt to more effectively meet the needs and improve cancer outcomes for Indigenous Australians.

## 147 | The unmet supportive care needs of Aboriginal and Torres Strait Islander people with cancer in the Northern Territory of Australia

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**Background/rationale or Objectives/purpose:** Indigenous Australians experience a disparate burden of cancer compared to non-Indigenous Australians. Supportive care is a critical for optimal cancer care and improved cancer outcomes. We aimed to assess the unmet needs of Indigenous people newly diagnosed with cancer, from the Northern Territory, Australia.

**Methodology or Methods:** Indigenous adults diagnosed with cancer within the past 6 months and attending a major cancer care center in the Northern Territory were received the Supportive Care Needs Assessment Tool for Indigenous Peoples (SCNAT-IP) at baseline and 3 months. Participants reported the level of their unmet need for 26 items across four domains. Descriptive statistics were used to identify the items and domains for which participants most commonly reported unmet need, and how this varied across the two study time points.

**Impact on practice or Results:** At baseline, the most common unmet needs for the 46 participants (40% women; 51 years mean age) were: money worry (34%) and requiring an Indigenous support person (30%). At 3 months (n = 21), the most common unmet needs were: money worry (28%) and concerns about the worries of loved ones (28%). The proportion of patients reporting at least one unmet need reduced after the first needs assessment in the physical/psychological domain (52% reduced to 43%); hospital needs (17% to 0%); information/communication (35% to 29%); and the practical/cultural domain (65% to 33%).

**Discussion or Conclusions:** Northern Territory Indigenous cancer patients commonly experienced unmet need, particularly due to worry about the costs associated with cancer. The proportion of participants reporting unmet need reduced after completing the baseline needs assessment.

## B. CHILDREN AND ADOLESCENT CANCER CARE

### 690 | Social Information Processing and Social Adjustment in Survivors of Pediatric Brain Tumours

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**Background/rationale or Objectives/purpose:** Survivors of pediatric brain tumours (SPBT) experience significant, long-term deficits in social adjustment negatively impacting their quality of life. Social information processing (SIP) has been implicated in social adjustment in related populations (traumatic brain injuries; autism spectrum disorder). This study aims to investigate the difference between SIP in SPBT compared to healthy controls and explore the relationship between SIP and social adjustment in SPBT.

**Methodology or Methods:** SPBT ( $n = 12$ , 58% female, mean age = 12.67), and controls ( $n = 22$ , 50% female, mean age = 10.64) completed behavioural assessments and questionnaires examining SIP, and social adjustment. Conducted correlation, and t-test analyses were examined differences between SIP processes (theory of mind[ToM], affect recognition, working memory, processing speed, executive function, and attention) across groups, and their relationship to social adjustment.

**Impact on practice or Results:** SPBT performed significantly worse than controls on Affect Recognition,  $t(33) = -2.94$ ,  $p = .006$ , and took significantly longer to complete the Affect Recognition test,  $t(33) = 5.33$ ,  $p < .001$ . There were no significant differences in ToM, executive function, attention, or social adjustment between groups. Examination of relationships revealed a significant correlation between attention deficits and affect recognition,  $r = -.62$ ,  $p = .041$  in SPBT, but not controls ( $p > .05$ ). No other significant relationships were found.

**Discussion or Conclusions:** Affect recognition is a key component of SIP and is compromised in SPBT compared to controls. Attention may be crucial role for affect recognition for SPBT. SPBT may have a unique profile compared to related populations, where SIP cannot account for or predict their social difficulties. This study has important implications for interventions to improve social adjustment in SPBT.

#### 687 | Peer Interactions, Social Acceptance, and Cognitive Late Effects are Critical in Pediatric Brain Tumor Survivor Outcomes

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**Background/rationale or Objectives/purpose:** Pediatric brain tumor survivors (PBTS) are at risk for peer-relationship difficulties. This research investigates links between social difficulties and cognitive late-effects that are often identified in PBTS and considered theoretically important for social competence.

**Methodology or Methods:** 191 PBTS (58% male,  $M_{Age} = 11.95$ ,  $SD_{Age} = 2.2$ ) and 135 Comparison Classmates (CC; 57% male,  $M_{Age} = 12.3$ ,  $SD_{Age} = 2.2$ ) from three North American hospitals completed school and home-based 1:1 assessments. Classmates (86% available in mainstream classrooms) completed the Revised Class Play (RCP) and Peer Acceptance (PA) ratings. PBTS and CC also completed measures of executive functioning (EF; Test of Everyday Attention for Children composite score) and processing speed (PSI; WISC-IV).

**Impact on practice or Results:** PBTS were lower in PA and RCP Leadership-Popularity, and higher in RCP Victimization and Sensitive-Isolated behavior, than CC ( $d$ 's = 0.50-0.72,  $p$ 's < .05). PBTS demonstrated poorer EF ( $d = 0.50$ ) and PSI ( $d = 0.91$ ) than CC. Regression analyses,

with post-hoc bootstrapping tested indirect effects, found that EF, but not PSI, accounted partially for lower PA in PBTS. PSI did partially account for PBTS-vs-CC differences in Leadership-Popularity, Victimization, and Sensitive-Isolated behavior. EF also partially accounted for these RCP differences, but only for girls.

**Discussion or Conclusions:** Deficits in PSI and EF may help account for negative peer interactions for PBTS. Indirect effects involving EF were more often significant for girls than boys. Additionally, female, but not male, PBTS, experienced more Victimization than CC. Victimization places youth at risk for psychological and possible physical harm. Peer interactions, not just academic progress, warrant attention from parents, providers, and school personnel preparing Individualized Education Plans for PBTS who demonstrate cognitive deficits.

#### 680 | About difficulties of health professionals to evaluate and care of affective and behavioral problems of pediatric brain tumor survivors

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**Background/rationale or Objectives/purpose:** Pediatric Brain tumors survivors (PBTS) present a higher risk for emotional and behavioral disorders. Differences in the methodology of the studies, complex links with cognitive sequelae, but also the overlapping of symptoms and the lack of consensus on the reference framework may complicate their characterization and their identification by the clinicians. These observations led us to question health professionals about the difficulties they encounter to evaluate and manage these patients.

**Methodology or Methods:** We conducted a practice survey between February and April 2018. We sent by email a questionnaire and a clinical case to different clinicians to assess their possible difficulties.

**Impact on practice or Results:** Thirty participants answered the questionnaire and 18 the clinical case. The majority (93.3%) find that the emotional and behavioral disorders are difficult to assess due to the overlapping of symptoms. All participants are in favor of creating a tool to help diagnosis. A majority (66.6%) emphasizes the interest of a dimensional approach. In the clinical case, the diagnostics mentioned, the complementary assessments and care proposed are very varied. All participants believe that the emotional and behavioral difficulties described may be related to cognitive sequelae.

**Discussion or Conclusions:** The overlapping of symptoms, the great variability of clinical presentations complicates the categorical approach. The dimensional approach could allow a more accurate description of the difficulties but would complicate exchanges between professionals. Define clusters of patients based on affective, behavioral and cognitive dimensions, while taking into account medical parameters, could allow to create a specific tool to facilitate the identification and management of psychopathological disorders of PBTS.

#### 662 | Social-affective abilities linked to peer relationship difficulties in children treated for brain tumors: Evidence of deficits that differentially impact female survivors

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**Background/rationale or Objectives/purpose:** Pediatric brain tumor survivors (PBTS) demonstrate social difficulties, but little research examines social-affective skills that could contribute to such deficits. This research examines peer relationship difficulties in relation to social-affective skills and investigates differences for male and female PBTS.

**Methodology or Methods:** 191 PBTS (58.6% male,  $M_{age} = 12.3$ ,  $SD_{age} = 2.3$ ) and 135 Comparison Classmates (CC; 57.1% male,  $M_{age} = 12.2$ ,  $SD_{age} = 2.3$ ) from three North American hospitals completed school and home-based 1:1 assessments. Classmates (86% of those available in mainstream classrooms) completed the Revised Class Play (RCP) and Peer Acceptance (PA) ratings. PBTS and CC completed the Emotional and Emotive Faces task assessing understanding of Emotional Experience during social interaction (EE), Emotive Communication (EC; manipulation of expressions to convey alternative feelings), and Concealment (motivations to manipulate expression of inner feelings). Regressions tested overall and contingent indirect effects using post-hoc bootstrapping.

**Impact on practice or Results:** PBTS demonstrated lower PA and RCP Popularity-Leadership, and higher RCP Sensitive-Isolated behavior. Female, not male, PBTS were higher in RCP Victimization than CC ( $d's = 0.50-0.72$ ,  $p < .05$ ). PBTS demonstrated significant deficits in Concealment and EE ( $d's = 0.24-0.53$ ,  $p < .05$ ). Indirect effects, partially accounting for PBTS peer-relationship difficulties, were found for EE and EC, but almost exclusively for girls. For example, EE and EC accounted for PBTS-vs-CC differences in Victimization for girls, but not boys.

**Discussion or Conclusions:** Research is needed to further delineate social-affective skills that account for peer relationship difficulties for PBTS that could be targets for intervention development. Social-affective skills warrant particular attention for female PBTS for whom they may trigger negative peer-interactions that demonstrate links to later psychological morbidity.

### 636 | Delay in diagnosis of cancer in children and adolescents: what can we learn from patients and their parents? The DIASTEM study

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**Background/rationale or Objectives/purpose:** Cancer in children is often diagnosed after a period of weeks or months during which symptoms develop. Their consequences on the seriousness of the disease and on survival and sequelae vary, but for many types of tumors, no consequences have been proved. Nevertheless, this delay may have major psychological consequences on the children and their parents. This study aims to investigate the subjective representations and experience of children with cancer and their parents regarding delay in diagnosis.

**Methodology or Methods:** Semi-structured interviews were separately conducted in children/adolescents and their parents. Discussions were audio recorded, anonymized and transcribed verbatim. We used a thematic analysis approach to identify patterns and themes (Thomas, 2006).

**Impact on practice or Results:** Results: Twenty children/adolescents (m age = 13 years) and 21 parents (m age = 42 years) were recruited. In interviews with children, 8 major themes (e.g. "self-identity", "life without illness") were identified, among them the diagnosis delay is finally rarely mentioned. Six major themes emerged during parents' interviews, including "giving meaning to the cancer experience" and "discrepancies

within the couple". Within these, the analysis described the difficulty in talking about the disease in the family.

**Discussion or Conclusions:** Our results mitigate the representation that children with cancer and their parents report critical distress related to the perception of a diagnosis delay. These findings offer insights on other causes of distress during the diagnostic period and will be used to build a questionnaire dedicated to the screening vulnerable children and parents at the beginning of treatment of the disease.

### 613 | Baseline Characteristics of Pediatric and Young Adult Patients with Medullary Thyroid Cancer and MEN-2B: Data from the Rare Tumor Initiative at the National Cancer Institute

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**Background/rationale or Objectives/purpose:** Medullary thyroid carcinoma (MTC) is a rare malignancy associated with the familial cancer syndrome multiple endocrine neoplasia (MEN) 2A or 2B. MEN-2B is a more aggressive subtype, associated with multiple morbidities. The current study examined psychosocial functioning in pediatric and young adults with MTC and MEN-2B.

**Methodology or Methods:** Patients with MTC and MEN-2B (N = 53; 46% male) were enrolled in a natural history study and administered a psychosocial assessment and modified Distress Thermometer at baseline. Caregivers (N = 47; 69% mothers) completed parallel forms.

**Impact on practice or Results:** Most patients (age M = 14.4 years, SD = 4.89) described their overall health as "good" to "excellent," though about 30% of adults and 50% of youth reported pain at least a few times a week, which interfered with everyday activities. Nearly half of adult patients endorsed symptoms of anxiety and a third reported symptoms of depression. Just under 50% of caregivers indicated their child received mental health treatment at some point, with 26% of patients being prescribed psychiatric medication. Patients also endorsed positive changes following diagnosis, including more confidence in their ability to handle stressors (85%) and knowledge that they can count on others in times of need (88%). When asked about interest in services, youth most strongly endorsed an interest in meeting others with MTC, whereas adults reported a preference for more education about their health condition.

**Discussion or Conclusions:** Results suggest physical and psychological vulnerabilities in AYA with MTC and MEN-2B. Future research should evaluate how concerns change over time. Behavioral interventions to support psychosocial functioning are indicated for this at-risk population.

### 584 | The development and user evaluation of a health behaviour change intervention for AYA cancer survivors

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**Background/rationale or Objectives/purpose:** A lifestyle intervention designed specifically for AYA cancer survivors is likely to be effective only if it's tailored to patient need and feasible for delivery within the existing health-care system. To inform the development of a lifestyle intervention for AYAs a series of studies were carried out with both patients and professionals.

**Methodology or Methods:** Quantitative and qualitative data on AYA (n = 267) current health behaviour status; interest in, and experience of receiving, lifestyle advice; and delivery preferences of a lifestyle intervention was gathered. Health professionals (n = 95) were surveyed

to explore promoting health behaviour change in AYAs. Subsequently, health behaviour change intervention resources containing comprehensive lifestyle information and behaviour change support tools were developed. These underwent evaluation by AYA and AYA health professionals' (n = 37) for relevance, appeal and usability.

**Impact on practice or Results:** AYA survivors demonstrated a desire for age-appropriate lifestyle information on a range of topics (physical activity, diet, smoking, alcohol consumption, sun safety, late effects management) delivered in multiple formats, and at various time-points throughout the cancer pathway. Health professionals were interested in a resource that could be given to patients within their care but noted multiple barriers to addressing health behaviour in routine practice. The intervention resources were well received with the majority rating the information as high quality, helpful and relevant. Over 80% of AYA reported the behaviour change support tools were 'very appealing' or 'quite appealing'.

**Discussion or Conclusions:** Engaging AYA and AYA representatives in intervention development is predicted to address issues of low uptake and adherence in formal piloting and evaluation.

### 569 | Whether and why AYA cancer patients choose to learn about their terminal disease conditions –a qualitative study

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**Background/rationale or Objectives/purpose:** Telling a terminal disease condition is an important, but a difficult task for physicians, especially when working with young patients. One of the barriers for physicians is their lack of knowledge about patient preferences regarding such a disclosure. The purpose of this study was to examine the preference for disclosure and its reason for/against the disclosure of terminal condition to AYA (adolescent and young adult) patients.

**Methodology or Methods:** We conducted semi-structured interviews for patients who were diagnosed with cancer during 15–29 years old. The main questions were as follows: 1) would you like to know your own terminal disease condition if the anti-cancer treatments are no longer effective? and 2) why?

**Impact on practice or Results:** Seven categories were extracted as reasons for disclosure, including "I want to consider treatment plans based on the correct disease condition" and "Not having such a discussion will let me feel distrust toward the physician." At the same time, six categories were extracted as reasons for non-disclosure, such as "I can recognize the disease condition without direct disclosure" and "Information about terminal disease conditions deprives me of hope." Both young adults and adolescents remarked positive statements for engaging in discussions with physicians about their terminal conditions.

**Discussion or Conclusions:** The reasons why AYA patients either prefer or do not prefer to know about their true disease conditions were similar to those for adult patients. Since there exist several limitations, further studies are needed for the AYAs with terminal disease condition regarding their preferences.

### 548 | Analysis of self-actualization of cancer patients in onco-stationary

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**Background/rationale or Objectives/purpose:** Analysis of the personal resources of cancer patients in adolescents is being studied with a focus on the process of self-actualization during the treatment period in the onco-hospital, with the aim of disclosing internal psychological resources and establishing cooperative relations with parents and doctors.

**Methodology or Methods:** 42 cancer patients of adolescents (34 girls, 8 boys) at the age of 15–17 years old, were diagnosed according to the «Self-Actualization Test (SAT)» method (L.Gozman, M.Latinskaya, M.Kroz,1995).

**Impact on practice or Results:** Depending on the objectives of our study, the test will be partially interpreted:

base scales «Competence in time» and «Support/Self-reliance», selective analysis of individual additional scales: «Behavior flexibility» and «Contact».

34% of subjects had average scores, 66% - low. Low level of self-actualization on scales:

«Competence in time»: teenager lives in the past, suffers from remorse for his misdeeds, keeps the wrongs inflicted on him, feels fear for his life;

«Support»: teenager with cancer doesn't have own internal motivation and is subject to external influence.

Analysis of individual additional scales showed: 65% of subjects had average scores, 35% - low. Consequently, on the scale of «Behavior flexibility», teenagers with cancer interact with other people and are able to adequately respond to a changing situation. The scale of «Contact» characterizes the ability of adolescents to establish emotionally-saturated contacts and «subject-subject» communication.

**Discussion or Conclusions:** Teenagers with cancer are not self-actualizing individuals and do not know nor see their potential and doubt their abilities.

### 546 | Health literacy in adolescents and young adults with cancer (AYAs) and their families: Qualitative findings from interviews with healthcare professionals

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**Background/rationale or Objectives/purpose:** Adolescents and young adults with cancer (AYAs) engage in decision-making interactions with both their families and clinicians where health literacy skills may be required. However research is yet to explore health literacy in this context. We aimed to investigate healthcare professional perspectives on: i) how AYAs and their families are involved in processes of information sharing and decision-making, ii) health literacy within this group, and iii) strategies that clinicians use for improving triadic decision-making.

**Methodology or Methods:** Semi-structured qualitative interviews were conducted with healthcare professionals working with AYAs aged 15–25 years old, including oncologists, general medical practitioners, nurses, psychologists and social workers. Interviews were recorded and transcribed, to allow for coding and thematic analysis.



**Impact on practice or Results:** All healthcare professionals reported engaging in clinician-patient-family communication processes regarding treatment decisions, associated healthcare decisions, social or lifestyle decisions (i.e., fertility preservation), participation in a clinical trials, and end of life decisions. Family members used health literacy skills to: i) contribute to knowledge about the AYAs condition and management, ii) activate the AYA, iii) help them negotiate their options prior to a decision, and iv) give support in shared decisions.

**Discussion or Conclusions:** This research is the first important step in the development of novel decision support tools to enhance patient- and family-centred healthcare for AYAs that recognise health literacy skills distributed within families. By better understanding the facilitators and barriers of effective communication and the process of decision-making, researchers can develop informed and relevant tools and strategies that address AYAs needs in this unique setting.

### 539 | Differences In Body Mass Index Between Families Of Survivors Of Pediatric Cancer And Healthy Controls

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**Background/rationale or Objectives/purpose:** The survival rate for childhood acute lymphoblastic leukemia (ALL) is above 90% in high-income countries. However, a recent meta-analysis found survivors of childhood ALL (SC-ALL) th percentile, significantly higher than combined sibling, control, and norm reference populations, and independent of treatment, gender, and age at diagnosis. This suggests psychosocial factors may contribute to risk of higher BMI in this population. As such, it is possible that differences in BMI exist at a familial level. This study investigated differences in BMI among families of SC-ALL, in comparison to healthy control families.

**Methodology or Methods:** Families of SC-ALL (n = 45; survivor, sibling, parent) and control families (n = 45; two siblings, parent) were recruited as part of a larger study. Participants had their height and weight measured by the study team. Data were analyzed using multilevel modeling to account for participants nested within families.

**Impact on practice or Results:** There was a significant effect of family type (survivor; control) on BMI, after controlling for age, gender, and family membership,  $t(78.71) = 4.49$ ,  $p < .001$ , such that survivor families had a significantly higher mean BMI ( $m = 23.49$ ), than control families ( $m = 20.17$ ).

**Discussion or Conclusions:** These data suggest that risk for higher BMI in SC-ALL extends to broader family structures. Potential associations with physical activity and family habits will be discussed. Future research should explore possible psychosocial mechanisms that may contribute to higher BMI in SC-ALL and their families.

### 487 | Reliability and validity of the French version of the Transition Readiness Assessment Questionnaire (TRAQ-Fr) using a multi-informant approach

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**Background/rationale or Objectives/purpose:** Approximately 90% of youth suffering from chronic conditions (including cancer) will survive into adulthood and transition from pediatric to adult care. This transition needs to be optimal since a suboptimal transition can lead to severe consequences. To measure adolescent and young adult (AYA) patients'

transition readiness, the Transition Readiness Assessment Questionnaire (TRAQ) was developed. We aimed to document the 1) construct validity, 2) internal consistency, and 3) absolute agreement between patients' and parents' reports on the French adaptation of the TRAQ (TRAQ-Fr).

**Methodology or Methods:** French-speaking AYA patients from a large tertiary hospital (n = 175; diagnosed with either cancer [n = 71], diabetes, cystic fibrosis, epilepsy, or renal pathology) and their parents (n = 168) were asked to complete the TRAQ-Fr. To examine the TRAQ-Fr's construct validity, confirmatory factor analyses (CFAs) were conducted. To determine its internal consistency, Cronbach's alpha coefficient was calculated. Finally, to investigate the absolute agreement between patients' and parents' scores on the TRAQ-Fr, intra-class correlations, paired t-tests, and Cohen's d were performed on 138 parent-child dyads.

**Impact on practice or Results:** The CFA models showed acceptable fit suggesting that the TRAQ-Fr supports the TRAQ's factorial structure. The TRAQ-Fr was found to have good overall internal consistency with Cronbach's alphas of .85 and .87 for patients and parents respectively. Patient and parent reports showed good absolute agreement with Cohen's d ranging from .03 to .32.

**Discussion or Conclusions:** The TRAQ-Fr was found to have good construct validity, internal consistency, and absolute agreement. The results support further use of the TRAQ-Fr among both AYA patients and their parents.

### 473 | Maternal emotional distress in Russian pediatric oncology/hematology: sociodemographic factors associated with distress score and problem domains

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**Background/rationale or Objectives/purpose:** There is a lack of information about the representation of problem areas and cultural specificity of maternal emotional distress in pediatric oncology/hematology in different countries. In most non-English countries the critical value of DT equals to four points is used and the choice of other values depends on the country, language and clinical features of the patient sample (Donovan et al., 2014). The aim of this study was to describe socio-demographic and culture-bound factors of emotional distress in Russian mothers of children with oncological/hematological diseases.

**Methodology or Methods:** 153 caregivers were included in the study. Psychometric assessment tools for mothers were DT-P and SCL-90-R.

**Impact on practice or Results:** The optimal cut-off score equals to five was found by the ROC analysis (AUC = 0.781, SE = 0.039; 95% CI, 0.70–0.86;  $p = .01$ ). The strongest correlations of distress with Emotional ( $r = .469$ ,  $p \leq .01$ ) and Practical ( $r = .239$ ,  $p \leq .01$ ) problems were found. Symptom frequencies were calculated: Anxiety (79.2%), Fatigue (32.9%), Sleep (17.4%), Family Problems (12.4%), Prayer (8.7%). On average, Emotional (92.2%), Physical (58.4%) and Practical (53%) problems were most often common. Neither the caregivers' age nor the duration of hospital stay were correlated with DT-P and SCL-90-R subscales.

**Discussion or Conclusions:** The optimal cut-off score equals to five was found for mothers in Russia. It turned to be higher than in the Dutch study (Haverman et al., 2013). This reflects the socio-cultural characteristics of Russian maternal population: a peculiar social desirability of anxiety about their children's health. The reported study was funded by RFBR according to the research project No 19-013-00682.

#### 467 | The level and problem domains of emotional distress in Russian pediatric oncological/hematological patients: cultural specifics and socio-demographic factors

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**Background/rationale or Objectives/purpose:** Non-English versions of the DT usually use the cutoff score equals to four, however, this value depends on the country, language and clinical characteristic of patients (Donovan et al., 2014). The aim of this study was to describe socio-demographic and culture-bound factors of the emotional distress of Russian pediatric oncological/hematological patients.

**Methodology or Methods:** 159 patients aged 7–17 with cancer and blood disorders were assessed by the DRS self-report and CDI by M. Kovacs. The ROC analysis was used to identify the cutoff score.

**Impact on practice or Results:** The cutoff score equal to four was found optimal for pediatric patients aged 7–12 years, and equal to three for patients aged 13–17 years. The correlations between the distress rating and problem domains were found for Physical ( $r = .405$ ,  $p \leq .01$ ) and Emotional ( $r = .610$ ,  $p \leq .01$ ) problems. The symptoms' distribution was also evaluated. Differences in the distress rating associated with the disease duration and the gender were found only in a group of adolescents 15–18 years. We found that the distress rating and the caregiver's age, patient's age and Emotional problems, the caregiver's age and the Physical problems were inversely correlated.

**Discussion or Conclusions:** The specifics of distress in Russian pediatric population include Physical and Emotional problems and such socio-demographic factors of distress as the disease duration and the caregiver's age. It can be taken into account to identify distress's risk groups and to organize the psychological support for Russian oncological/hematological pediatric patients. The reported study was funded by RFBR according to the research project No19-013-00682.

#### 448 | Information needs of patients and survivors with young-onset colorectal cancer: An interpretive description study

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**Background/rationale or Objectives/purpose:** The burden and risk of young-onset colorectal cancer (yCRC) in those diagnosed before the age of 50 years, is rapidly increasing in Canada. There is limited research exploring how colorectal cancer patients and survivors of all ages access information regarding their diagnosis and treatment, and very little has been conducted in the unique subgroup of young-onset colorectal cancer survivors. The aim of this qualitative study is to explore how yCRC patients and survivors access information and support during treatment and survivorship, and whether their information needs are satisfied.

**Methodology or Methods:** This interpretive description study is seeking to recruit 20–30 patients and survivors from a larger, international, cross-sectional survey study our team is currently conducting regarding how patients seek out information regarding their cancer diagnosis and treatment. Canadian participants are currently being recruited to participate in semi-structured interviews, and analysis is ongoing.

**Impact on practice or Results:** We expect yCRC patients and survivors to have information needs that are met both by online and in-person modalities, and we expect patients seek out information and advocate for themselves. We also wish to gather information on which forms of online support groups would be palatable to this group.

**Discussion or Conclusions:** By identifying the information and support needs of yCRC patients and survivors, researchers including our group can develop informational materials targeted at this group, and clinicians would be able to distribute these resources. We will also utilize these data to assist in developing an online portal for these patients.

#### 397 | Emotional distress among parents of children diagnosed with cancer: Association with problem-solving skills and perceived competence to face the illness

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**Background/rationale or Objectives/purpose:** Parents of children diagnosed with cancer are at high risk for distress and can have difficulties in problem-solving. Interventions have been implemented to increase parents' problem-solving skills and decrease emotional turmoil. However, we don't know to what extent problem-solving skills may contribute to emotional distress. We aimed to (1) assess the contribution of problem-solving skills and perceived competence to emotional distress, and (2) explore the differences between mothers and fathers in this contribution.

**Methodology or Methods:** Ninety-nine parents (56 mothers and 43 fathers) of childhood cancer patients filled-out questionnaires on problem-solving skills (SPSI-R), perceived competence to face cancer (PCS adapted), mood disturbance (POMS-SF) and perceived stress (PSS), one year after the end of treatments. Multiple regression analysis was used to estimate the unique contribution of problem-solving skills and perceived competence to emotional distress. Models were secondarily compared in mothers and fathers separately.

**Impact on practice or Results:** Mothers had significantly higher levels of perceived stress compared to fathers. No significant differences were observed on others measures. Low problem-solving skills and perceived competence to face cancer were significantly associated with higher levels of mood disturbance and perceived stress in both mothers and fathers. These variables contributed significantly and respectively to 26% and 45% variation in mood disturbance and perceived stress. Sex only contributed to mood disturbance ( $p < .05$ ).

**Discussion or Conclusions:** Parents' distress, particularly perceived stress, probably depends heavily on problem-solving skills and perceived competence. These results support the need to enhance problem-solving skills in parents of children treated for cancer and improve sense of control to further optimize emotional adjustment.

#### 372 | Identifying self-management strategies used by childhood cancer survivors

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**Background/rationale or Objectives/purpose:** Childhood cancer survivors (CCSs) are at increased risk of chronic health problems. Effective self-management could help CCSs cope with the challenges that accompany survivorship, and reduce their risk of developing further health problems. There is little evidence about the extent to which CCSs engage in self-management and the specific strategies they use. This study aimed to identify strategies that CCSs use to manage the consequences of cancer in their everyday lives.



**Methodology or Methods:** Twenty-four CCSs (median age 23 years) were recruited via outpatient follow-up clinics. Participants underwent a semi-structured interview. Interviews were audio-recorded and transcribed. Directed content analysis (deductive and inductive) was used to identify and code self-reported self-management strategies and categorise them into self-management types

**Impact on practice or Results:** CCSs reported 116 specific self-management strategies which were categorised into 20 self-management strategy types. All CCSs used several self-management strategy types (median 13; range 6–18) and specific self-management strategies (median 35, range 13–52). The most frequently reported strategy types were: ‘adopting a healthy lifestyle’ (n = 24), ‘self-motivating’ (n = 24), ‘using support’ (n = 24), and ‘reasoned decision making’ (n = 24). The most common specific self-management strategies were: ‘receiving family support’ (n = 20), ‘attending follow-up and screening appointments’ (n = 20), ‘thinking objectively about negative health behaviours’ (n = 19), and ‘undertaking physical activity’ (n = 18).

**Discussion or Conclusions:** This is the first study to focus on CCSs’ own reports of the strategies they employ to look after their health and wellbeing. These findings can inform the development of supported self-management interventions for CCSs in follow-up care.

### 359 | Pilot study of TAKING BACK CONTROL TOGETHER: Feasibility and measure of change of a supportive intervention program with parents whose children are being treated for cancer

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**Background/rationale or Objectives/purpose:** This study aims to pilot-test a manualized program to support parents in pediatric-oncology. The program is a combination of the best existing evidence in the field. We aimed to assess (1) feasibility and (2) pre-post-follow-up changes associated with this program.

**Methodology or Methods:** Two studies were conducted. Firstly, 6 parents and 6 healthcare-professionals participated in a mixed-study (questionnaires and focus-groups) to assess TAKING BACK CONTROL TOGETHER’s pertinence and materials (e.g., manuals). Secondly, 20 parents couples were invited to complete the 6-sessions program (4 individual problem-solving training sessions and 2 couple sessions in dyadic coping), starting four weeks after cancer diagnosis. Measures included self-reported distress (POMS-SF), problem-solving skills (SP-SI-R) and dyadic coping (DCI) in pre-, post- and 3-months follow-up. We collected social validity assessments on the program (Kazdin scale). Thematic content analysis, Cohen’s d and non-parametric tests were performed on qualitative and quantitative data respectively.

**Impact on practice or Results:** The program was redesigned according to improvement suggestions collected in the first study (e.g., adaptation to different cultures). The pilot study yielded high satisfaction from participants (75 ± 13%) and reduction in distress, as well as improvement in problem-solving skills and dyadic coping (medium to large d effect sizes).

**Discussion or Conclusions:** This study demonstrated that the program was feasible and well accepted. We observed encouraging preliminary results that need to be confirmed in larger-scale trials. This study’s results aim to provide clinicians with a program that has potential to prepare parents for their child’s cancer treatment by allowing them to better control the situation.

### 348 | Feasibility of an exercise program and hypnosis therapy in children with leukemia and lymphoma during the first three months of oncology treatment: a study protocol in Uruguay

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Calgary, Canada

**Background/rationale or Objectives/purpose:** Objectives: Determine feasibility and potential benefit of an exercise program (EP) and hypnosis therapy (HT) during the first three months of treatment in pediatric patients diagnosed with leukemia and lymphoma.

**Methodology or Methods:** Methods: This pilot study will seek to recruit 30 newly diagnosed children (4–14 years old), for two phases (I, II). Phase (I) in-hospital: Two arms compared over 30 days. Participants in arm (IA) will engage in an individualized/supervised EP (strength, balance, flexibility and aerobic exercises), 5 times/week. Participants in arm (IB) will receive HT 2 times/week with a focus on treating anxiety, pain and nausea. Phase (II) combined in-hospital/home-based: Both arms will complete a combined intervention of supervised in-hospital/home-based EP and HT for 60 days. Outcomes: Feasibility (recruitment and adherence), motor development (MOON test), functional capacity (TUG), quality of life and fatigue (PedsQL cancer module and fatigue). Assessments conducted at 3 time points (baseline, day 31, day 92). Statistical analysis. Phase I will compare differences in all outcomes between arms A and B using SPSS/Mann-Whitney test. Phase II pre-post-test will be performed for all outcomes using SPSS/paired t-tests.

**Impact on practice or Results:** Project underway

**Discussion or Conclusions:** Conclusions and clinical implications: This is the first study of this type of intervention in Uruguay. The study will add evidence for the feasibility of HT and EP as adjuvant therapies during treatment. A subsequent multi-center study will aim to include all diagnoses as a way to incorporate EP and HT as part of standard care in pediatric oncology in Uruguay.

### 334 | Trajectories of psychosocial risk in families of children newly diagnosed with Cancer

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Children’s Hospital, Vancouver, Canada

**Background/rationale or Objectives/purpose:** There is limited information regarding the psychosocial trajectories of families in pediatric cancer. We examined early trajectories of psychosocial risk in families with children newly diagnosed with cancer using the Psychosocial Assessment Tool (PAT, Universal, Targeted, Clinical risk levels).

**Methodology or Methods:** Families were randomly allocated to an intervention (IG, PAT summary profile provided to patient treating team) or control group (CG, no summary provided) in two pediatric cancer centers. Caregivers (N = 122) of newly diagnosed children completed the PAT along with outcome measures as part of a larger study at 2–4 weeks (T1) and 6 months after diagnosis (T2). McNemar-Bowker and Chi-square tests were used for analyses. IG and CG groups didn’t differ sig-

nificantly in terms of PAT risk level and therefore their data were merged.

**Impact on practice or Results:** The distribution of families across the PAT risk levels did not differ significantly between T1 and T2 ( $p > .05$ ); 63% remained within the same PAT risk level across time. A subgroup of families in the Universal risk level at T1 significantly moved to targeted (28%) or clinical (2%) risk levels at T2. Similarly, a subgroup of families in the Targeted risk level at T1 significantly moved to Universal (34%) or clinical (13%) risk levels at T2 ( $ps < .01$ ).

**Discussion or Conclusions:** While psychosocial risk remained relatively consistent for the majority of families, a substantial number of families within Universal or Targeted risk levels at T1 are likely to change risk level overtime. This information supports periodical routine assessment, which may be critical for re-allocating psychosocial intervention resources.

### 315 | Physical activity for children with cancer: the parental perspective

*Sarah Grimsbaw<sup>1,2</sup>, Nora Shields<sup>2</sup>, Nicholas Taylor<sup>2</sup>, Françoise Mechinaud<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Children receiving treatment for cancer are inactive and there is little known about the best ways to facilitate their participation in physical activity.

This study aimed to understand from the parents' perspective, the physical activity experiences of children undergoing cancer treatment. A specific objective was to better understand barriers and facilitators of physical activity.

**Methodology or Methods:** This study was completed using qualitative methods. Data were collected via semi-structured interview with parents of children who were in their first year of treatment, including hematopoietic stem cell transplantation. Data were analysed using thematic analysis.

**Impact on practice or Results:** Twenty parents were interviewed (17 mothers, 3 fathers; with children aged 4–17, with a variety of cancer diagnoses). A framework was developed to represent how cancer diagnosis and subsequent treatment can negatively affect a child's physical activity. Parents described the cancer itself, adverse treatment side effects and the treatment environment as contributing factors to inactivity. Parents communicated these effects went beyond physical function, describing that children experience a loss of independence, isolation and reduced motivation that adversely impacts their global well-being. Parents described an inability of children and themselves to overcome the barriers to physical activity without support from their oncology team.

**Discussion or Conclusions:** The reasons for reduced physical activity levels in children with cancer in the acute treatment setting are complex. Reasons include child factors, the treatment environment, and oncology team culture. These data can be used to inform development of interventions that address physical inactivity in children with cancer.

### 311 | Teenagers and young adults with cancer, parents and age-appropriate care: 'It didn't only happen to me, it happened to everybody else too'

*Suzanne Mooney*

*Queen's University Belfast, Belfast, United Kingdom*

**Background/rationale or Objectives/purpose:** The wellbeing of young people with cancer is compromised by serious illness at a critical life course transition. Young people's care falls between paediatric, adult and specialist settings, leaving age-related care needs not well understood. Previous research highlights diverse preferences with no universal agreement on optimal age-appropriate care.

**Methodology or Methods:** This doctoral study explored the experiences of fourteen young people diagnosed in their teenage and young adult years (16–24 years), receiving treatment in adult settings. A series

of three interviews were conducted over 12–18 months using participatory mapping to explore identity, illness, relationship and care narratives. Two interviews were undertaken with young people's identified caregivers (all parents), and single interviews with fifteen multidisciplinary professionals. The life-course paradigm and holistic wellbeing construct 'Sense of Coherence' were applied to analyse how young people might live well with illness and sustain their developmental trajectory.

**Impact on practice or Results:** Young people's experience of cancer is confirmed as an evolving process with common transitions and unique turning points. Dominant cancer discourses, healthcare system hierarchies and normative models of independent 'adulthood' and youth development are identified as constraining influences on their capacity to maintain wellbeing. Supportive relationships with parent/caregivers, family, peers and professionals are identified as vital resources with evidence of sustained and accelerated age-related development.

**Discussion or Conclusions:** Relationship-based care: An increased focus on relationship-building, communication and resource-orientated support for young people and their parent/caregiver(s) is recommended to help young people engage with their illness experiences as valued, if unwelcome, opportunities for wellbeing promotion across the life course.

### 305 | Factors impacting physical activity participation in children with cancer and their siblings at Kids Cancer Care (KCC)

*Carolina Chamorro Vina<sup>1,2</sup>, Juliet Spence<sup>3</sup>, Natalia Albinati<sup>2</sup>, Francesca Rossi<sup>4</sup>, Giulia Zucchetti<sup>5</sup>, Nicole S Culos-Reed<sup>2,6,7</sup>*

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**Background/rationale or Objectives/purpose:** Purpose: To identify physical activity (PA) barriers, facilitators and preferences among tweens and teens (11–18 years old) affected by cancer, and their siblings. Data will be used to inform quality improvement initiatives for PEER, a PA program offered by Kids Cancer Care (KCC).

**Methodology or Methods:** Methods. A cross sectional survey was completed by 121 participants (59 patients/survivors and 62 siblings) involved with KCC. The survey consisted of questions on demographics, barriers, facilitators, and attitudes toward PA. Descriptive statistics were used to analyze socio demographics and clinical characteristics. A comparison among the groups (patient vs siblings, BMI, diagnosis, etc.) was made using t- test analysis for ordinal variables and chi-square test for categorical variables.

**Impact on practice or Results:** Results: Although PEER has been running since 2013, 75% of participants were unaware of the program. Among 29 activities mentioned, 63.6 % of participants included a desire to try swimming, followed by climbing and hiking. Stress/fear (39.4%) was the most important barrier to PA, followed by lack of time (29.3%) and lack of confidence (28.3%) for sports participation. The most important motivating factor was support from friends (62.1 %). Contrary to adults with cancer, physician advice was relatively unimportant to this population.

**Discussion or Conclusions:** Conclusions: PA participation in this population is affected by a unique set of barriers and facilitators. PA programs that improve self-confidence and offer a safe environment to

acquire healthy PA behaviors are needed. Further improvements to the PEER program include more effective promotion, reconsideration of PA venue selections, offering more preferred activities, and introducing friend support.

## 269 | Emotional distress and coping strategies of adolescents' mothers undergoing HSCT in Russia

*Alina Khain, Tatyana Ryabova*

*Dmitry Rogachev National Medical Research Center Of Pediatric Hematology, Oncology and Immunology, Moscow, Russian Federation*  
**Background/rationale or Objectives/purpose:** Background Previous studies have shown noticeable distress of caregivers and its association with the children's adjustment to cancer treatment (Jobe-Shields L. et al, 2009; Packman W. et al, 2010). The aim of the research was to describe the maternal distress characteristics and its associations with coping strategies prior and during the HSCT in Russian sample.

**Methodology or Methods:** Methods Measures of psychological symptoms (SCL-90-R), emotional distress (DT-P), and coping behavior (COPE) were obtained from 28 mothers of adolescent's with oncohematological diseases (aged 31–53; M = 41.1+5.65) prior to HSCT (T0: 1 week) and during the active phase of transplantation (T1: +3 week).

**Impact on practice or Results:** Results The results demonstrated that the distress of mothers before and during HSCT was at the level from moderate to high (T0: 6.83+2.54; T1: 6.00+2.47). At T0 the increase of distress was significantly associated with symptom dimensions: depression ( $r = 0.395^*$ ), anxiety ( $r = 0.641^{**}$ ), hostility ( $r = 0.396^*$ ), psychoticism ( $r = 0.427^*$ ), as well as the global wellness index ( $r = 0.482^*$ ), at T1 the level of distress is associated only with anxiety ( $r = 0.464^*$ ). Less use of coping restraint ( $r = 0.392^*$ ) at the stage of preparation for HSCT and greater denial ( $r = 0.466^*$ ) at the stage of active treatment were interrelated with a higher level of distress of adolescents' mothers (\*  $p < 0.05$ ; \*\*  $p < 0.01$ ).

**Discussion or Conclusions:** Conclusions The detected level of maternal distress confirms their need for additional psychological support. Further understanding of adolescents' mothers adjustment will help to develop comprehensive psychological programs for families undergoing HSCT in Russia.

## 235 | Prevalence and Severity of Psychological and Physical Symptoms Among Childhood Cancer Patients on Active Therapy

*ashraf mohamed<sup>1</sup>, Meg Cardoni<sup>2</sup>, mohamed kabbani<sup>2</sup>, Mohamed Abdelmonem<sup>2</sup>, Elie Fegali<sup>3</sup>, Victoria Burris<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** To determine therapy related symptom prevalence, and degree of distress during childhood cancer therapy.

**Methodology or Methods:** Children age 2–18 years receiving cancer therapy were included. SSPedi (Symptom Screening in Pediatrics Tool) has 15 questions (Qs) with Likert score of 0–4 assess degree of symptom bothersome was utilized. 67 patients participated (94% of all offered), survey was filled out by patients or care givers. Follow up survey was completed for 91% during the 6 months study period. 128 surveys were analyzed, with total 1920 Qs.

**Impact on practice or Results:** The most frequently reported and bothersome among all patients was feeling tired 76%, with 23.3% severely bothered by it, followed by being cranky or angry 59%, and pain 53.4%.

Significantly higher psychological symptoms (feeling sad, worried, scared) were reported compared to somatic symptoms (47% Vs 32%) with severe distress (21.7% Vs 14.2%). P Follow up showed significant changes (P Significantly higher percentage of girls reported symptoms

across all 15Qs compared to boys, yet with lesser distress intensity (P 0.01).

More than 50% of patients with Solid tumor reported problems in 7/15 Qs compared to 3/15 Qs in patients with ALL, yet, 70% of patients with ALL reported being tired with 30% severely bothered by it compared to solid tumors (45.5% and 13.5%). P = 0.01.

**Discussion or Conclusions:** Children with cancer reported multiple symptoms with significant distress. Proactively screening and addressing therapy related symptoms is recommended to help improve patient tolerance to therapy and QoL.

## 218 | Access to therapeutic innovation for children with advanced cancer in Northern Europe

*Sierra Alef-Defoe<sup>1</sup>, Solenne Carof<sup>2</sup>, Hanne Baekgaard Larsen<sup>1</sup>, Nanna Maria Hammer<sup>1</sup>, Emilien Schultz<sup>2</sup>, Sylvain Besle<sup>2</sup>, Karsten Nysom<sup>1</sup>, Britt Pinkowski Tersbøl<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** As personalized medicines become therapeutic solutions for children with advanced cancers, there is increasing concern about access to these targeted therapies. Typically available through Phase I/II clinical trials, these targeted therapies are only available at certain centers, often necessitating patient mobility for enrollment. As pediatric cancers are already rare, concerns about access are exacerbated by increasing specialization. Children's access to innovative cancer therapy may be hindered by systematic and socio-cultural factors. The ACCE study (Access to therapeutic innovation for Children and adolescent with Cancer across Europe) has begun investigating this issue in the French setting, but it has not been investigated in the Nordic region, where Copenhagen's Rigshospitalet is the main childhood cancer trial center.

**Objective:** Explore patients', caregivers', and providers' experiences and challenges with referring, accessing, or providing innovative therapies for children with cancer in Northern Europe.

**Methodology or Methods:** Participants are recruited from the pediatric hematology/oncology Phase I/II trial unit at Rigshospitalet, Copenhagen, Denmark. In-depth, semi-structured interviews are conducted with 5–10 families and 20+ providers. Interviews address themes of care trajectory and socio-cultural dimensions of the trial experience. Observational research takes place in the trial unit. A thematic analysis will be conducted. Data collection takes place between March - August 2019.

**Impact on practice or Results:** The results will provide important knowledge on access to innovative medicines for children with advanced cancer in the Nordic countries and in Europe when analyzed with the French ACCE data.

**Discussion or Conclusions:** Findings will empower stakeholders to improve access to innovative therapy for children with cancer.

## 189 | A qualitative study on parents of childhood cancer survivors and their return to daily family life and couple relationship

*Mona L. Peikert<sup>1</sup>, Laura Inhestern<sup>1</sup>, Konstantin A. Krauth<sup>2</sup>, Gabriele Escherich<sup>3</sup>, Stefan Rutkowski<sup>3</sup>, Corinna Bergelt<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Childhood cancer leads to changes and burden in the lives of all family members. Only little is known about the reintegration of parents of childhood cancer survivors into daily life after the end of treatment. This study investigates cancer-related changes and the reintegration into daily family life and partner relationship during intensive cancer treatment and thereafter.

**Methodology or Methods:** We interviewed 49 consecutively sampled parents of 31 cancer survivors ( $\leq 18$  years at diagnosis of leukemia or brain tumor) approximately 16–24 months after the end of intensive cancer treatment (e.g. chemotherapy). The transcripts were analyzed using qualitative content analysis.

**Impact on practice or Results:** During treatment, parents struggled with the difficulties of every-day life (e.g. work, household, childcare). Couples got little time with each other and some reported dispute and burden. But over the long term, being faced with the child's disease also led to strengthened relationships, improved communication, increased mutual trust and greater appreciation of daily family life. Support by the extended family, strong relationship prior to diagnosis and use of psychosocial services had a positive impact. Even though some family relationships remained strained, most families had adapted well at the time of the interview.

**Discussion or Conclusions:** Parents described various positive and negative changes in their family life and partner relationship. In some families, relationship and family strain remained high after the end of treatment. Specifically, some families lacked the energy required to carry on as they did before the diagnosis. Psychosocial services supporting parents with the re-entry into daily life could address specific problems of this population.

### 185 | Cancer-related fatigue in children diagnosed with cancer

*Lotta Hamari<sup>1,2</sup>, Liisa Järvelä<sup>3</sup>, Päivi Lähteenmäki<sup>3</sup>, Mikko Arola<sup>4</sup>, Olli Heinonen<sup>5</sup>, Anna Axelin<sup>1</sup>, Tero Vahlberg<sup>6</sup>, Sanna Salanterä<sup>1,7</sup>, Nicole Culos-Reed<sup>8</sup>*

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**Background/rationale or Objectives/purpose:** Previous research on cancer-related fatigue in children is inconsistent. A total of 50–76% of children with cancer have been reported to experience fatigue. In order to support the timing of psychosocial support and physical activity promotion among children with cancer, it is important to estimate the level of fatigue at different stages of treatment.

The aim was to assess the level of self-reported fatigue in children during cancer treatment.

**Methodology or Methods:** This was a longitudinal observational study of 5 to 16-year-old children with cancer. Fatigue was assessed with validated questionnaires (PedsQL™ Multidimensional Fatigue Scale by Varni et al. 2002) filled by participating children at five points (0, 2, 6, 12 and 30 months from diagnosis). Higher scores (0–100 scale) indicated less fatigue. Analysis included descriptive statistics and repeated measures analysis of variance.

**Impact on practice or Results:** N = 21 (7 girls, 14 boys; mean age 9.3yr SD 3.5) children with cancer participated. The mean (SD) of the fatigue scores at each time point (from beginning to 30 months) were 67 (15), 68 (13), 72 (19), 74 (13) and 76 (14), respectively. The change in Fatigue scores was significant ( $p = 0.043$ ). In paired comparisons,

fatigue scores at 12 months and 30 months differed from baseline.

**Discussion or Conclusions:** The fatigue scores were worse at the beginning of the treatment, and improved at the 12 and 30-months measurement points. Interventions such as psychosocial support and physical activity promotion should be targeted early in the treatment trajectory to help to alleviate the negative impact of fatigue on well-being and overall quality of life.

### 184 | Self-perceived physical appearance in children diagnosed with cancer

*Lotta Hamari<sup>1,2</sup>, Liisa Järvelä<sup>3</sup>, Päivi Lähteenmäki<sup>3</sup>, Mikko Arola<sup>4</sup>, Olli Heinonen<sup>5</sup>, Anna Axelin<sup>1</sup>, Tero Vahlberg<sup>6</sup>, Sanna Salanterä<sup>1</sup>, Nicole Culos-Reed<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Childhood cancer treatments may lead to undesired changes in body appearance such as edema, weight gain, and hair loss. In order to provide psychosocial support related to these changes, it is important to know how children perceive themselves at different stages of treatment.

The aim was to assess the level of self-perceived physical appearance (SPPA) in children diagnosed with cancer during treatment.

**Methodology or Methods:** This was a longitudinal observational study of 10- to 16-year-old children with cancer. The SPPA was assessed at five points (0, 2, 6, 12 and 30 months from diagnosis). The SPPA is a valid measure, with higher scores (0–5 scale) reflecting a respondent perceiving his/her appearance as better (Lintunen et al., 1987). Analysis included descriptive statistics and Wilcoxon signed rank test.

**Impact on practice or Results:** N = 14 (3 girls, 11 boys; mean age 12.8yr) children diagnosed with cancer participated. The mean (SD) of the appearance scores at each timepoint (from beginning to 30 months) were 4.0 (0.94), 3.7 (0.95), 3.1 (1.4), 4.1 (0.94) and 3.5 (1.2). The scores between the 1<sup>st</sup> and 2<sup>nd</sup> ( $p = 0.046$ ), 2<sup>nd</sup> and 4<sup>th</sup> ( $p = 0.025$ ), and 3<sup>rd</sup> and 4<sup>th</sup> ( $p = 0.042$ ) measurement points were statistically different.

**Discussion or Conclusions:** Children's perception of their appearance is impacted by treatment, with decreases shown in SPPA from diagnosis through treatment. Perceived physical appearance may be a significant contributor to overall well-being, and thus should be addressed during the treatment and recovery phases.

### 181 | Experience of distress in age 20's patients during cancer treatment

*Yu Koyama*

*Toho University, Tokyo, Japan*

**Background/rationale or Objectives/purpose:** Adolescent and young adults (AYAs) are in a critical period of life marked by developmental transitions, such as completing education and getting job, becoming independent from parents, and getting married and having children. A diagnosis and treatment of cancer can be physically, and emotionally large impact to AYA patients. Young adult cancer patients had higher distress than senior adults. Especially it was highest in age 20's patients. This study's object was to describe experience of distress in those patients during cancer treatments.

**Methodology or Methods:** This study applied for cooperation to patient group of AYA. Conditions of participation is diagnosis with cancer between age 20–29years, and treatment to cancer which it does not matter the time from diagnosis. To the participants, conducted a semi-structured interview what they experience and how they feel

during treatment of cancer. The interview data were analyzed qualitative descriptive.

**Impact on practice or Results:** 8 participants response this study. Distress in age 20's patients identified could be classified into seven core categories: inevitable physical distress; fear of death; inferiority to normal others; guilt for parents; anxiety for future; loneliness without peers; embarrassment to get help.

**Discussion or Conclusions:** Age 20's patients have many varieties distress not only physical and psychological and psychosocial but problems of developmental stage. From these results, it is suggested that it is necessary to consider the need for support on various situations for cancer patients in 20's who have many distress.

### **158 | Developing Exercise and Physical Activity Guidelines and Recommendations in Pediatric Oncology: An Application of the Delphi Technique**

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**Background/rationale or Objectives/purpose:** To develop exercise guidelines and recommendations in pediatric oncology using the Delphi technique.

**Methodology or Methods:** Nine leaders (ie, core team) in pediatric oncology and exercise were invited to oversee the multi-stage, iterative process of reaching consensus on the topic. Next, 113 experts (eg, researchers, clinicians) were identified and invited to sit on the international committee. Subsequently, the core team developed and distributed the first survey consisting of closed- and open-ended questions. Items were developed to determine level of agreement on key terminology (eg, exercise vs. PA), exercise prescription (ie, frequency, intensity, time, type), and current literature (eg, behaviour change). Responses are being collected and analyzed using qualitative analysis and descriptive statistics. Consensus is defined at 80% agreement.

**Impact on practice or Results:** To date, 109 of 122 responses (89% response rate) have been collected and preliminary analyses indicate consensus on topics covering terminology and current literature. However, there is disagreement concerning exercise prescription, specifically, with regards to distinguishing between high, moderate, and low intensities.

**Discussion or Conclusions:** Findings represent a first step towards reaching consensus and developing evidence-based exercise guidelines/recommendations. This multi-stage, iterative process (ie, survey development, dissemination, data collection) will continue until September 2019, when the core team and an advisory committee comprised of key stakeholders (eg, clinicians, patients/survivors, caregivers) will convene to discuss areas of agreement/disagreement and seek to unanimously outline the consensus document. The outputs from this project have the potential to guide further research and move exercise evidence into pediatric oncology practice at a local, national, and international level.

### **139 | The Pediatric Psychosocial Matrix and Guidelines: A Tool to Assess Readiness and Guide Implementation**

*Lori Wiener<sup>1</sup>, Lynne Padgett<sup>2</sup>, Julia Rowland<sup>3</sup>, Wendy Pelletier<sup>4</sup>, Victoria Sardi-Brown<sup>5</sup>, Peter Brown<sup>5</sup>, Mary Jo Kupst<sup>6</sup>*

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<sup>5</sup>Mattie Miracle Cancer Foundation, District of Columbia, USA; <sup>6</sup>Medical College of Wisconsin, Milwaukee, USA

**Background/rationale or Objectives/purpose:** Background/rationale: In 2015, in collaboration with the Mattie Miracle Cancer Foundation

(MMCF), the Psychosocial Standards of Care Project for Childhood Cancer (PSCPC)—a large interdisciplinary group of expert stakeholders, published 15 evidence-based standards for pediatric psychosocial care. The Standards have provided centers a blueprint for providing evidence-based care.

**Methodology or Methods:** Methodology Since the standards were published, centers have requested guidance on best practices for their implementation. In response, a Matrix (Institutional Scoring Measure) for each standard has been developed. Accompanying the matrix, individual Guidelines (how to) implement each of the standards has also been developed. The Guidelines include strategies (action steps) and resources/tools to help sites improve their score on the matrix and enhance their current practice.

**Impact on practice or Results:** Impact on practice Psychosocial providers at over 20 centers are currently reviewing the Matrix and Guidelines using an online rating tool. Centers are rating the usefulness and clarity of each standard within the Matrix, and the flexibility allowed for scoring how their program can implement each standard within the Guidelines. They are also reviewing whether strategies and tools provided for each standard can help centers to improve their score and care.

**Discussion or Conclusions:** Discussion Following the current review, the Matrix and Guidelines will be revised and will then undergo evaluation at additional pediatric oncology centers. Funding through MMCF will be provided for centers to evaluate the feasibility, usefulness, and outcomes associated with the use of the newly developed Matrix and Guidelines.

### **123 | When seeing the Psychologist is Normal! Routine Psychological Engagement for Adolescents and Young Adults**

*Toni Lindsay*

*Chris O'Brien Lifehouse, Sydney, Australia*

**Background/rationale or Objectives/purpose:** The challenges faced by Adolescents and Young Adults (AYA's) with cancer have been well documented particularly when treated in adult facilities. Chris O'Brien Lifehouse is a large tertiary oncology hospital in Sydney Australia that treats large numbers of AYA patients, particularly those with sarcomas.

**Methodology or Methods:** The AYA service within the hospital comprising of Medical Oncology, Nursing, Allied Health and Palliative care have developed direct referral pathways in which patients are provided with opt out psychology services. As a result almost all patients engage in routine psychological care from their diagnosis through to survivorship or palliation.

**Impact on practice or Results:** Over the past eight years routine psychological care has been provided to all patients under the age of 30 within the hospital. Very few have declined this input, and anecdotally this engagement with patients and families has normalised the impact of cancer on emotional functioning, allowed a proactive approach to clinical issues (such as anticipatory nausea and vomiting) and allowed for strong relationship building to foster difficult conversations when needed such as when making decisions about treatment or at end of life.

**Discussion or Conclusions:** The process of making psychological treatment part of routine care has allowed young people to speak freely to both their oncologists but also other members of the team around their emotional distress, worries or anxieties. By normalising this experience young people are more likely to identify when they are having difficulties and be engaged around strategies to help manage same.

### **116 | Developing, implementing and evaluating in-hospital physical activity practices in pediatric oncology programs in Alberta: an integrated knowledge translation project**

*Amanda Wurz<sup>1</sup>, Gregory M.T. Guilcher<sup>1,2</sup>, Fiona Schulte<sup>1,2</sup>, Carolina Chamorro-Viña<sup>1,3</sup>, S. Nicole Culos-Reed<sup>1,4</sup>*

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**Background/rationale or Objectives/purpose:** To develop, implement, and evaluate in-hospital physical activity (PA) practices in pediatric oncology programs in Alberta.

**Methodology or Methods:** Three inter-related studies will be conducted. Study 1 [cross-sectional mixed-methods] will provide insight into usual care and barriers/enablers to implementing in-hospital PA practices (e.g., recommendations, education). Healthcare professionals (e.g., oncologists, nurses, physiotherapists, child life specialists), administrators, and patients (5–18 years, newly diagnosed) and their caregivers at the two children's hospitals in Alberta will be sent a survey. A subsample will be invited for interviews to further explore barriers/enablers identified. Study 2 [cross-sectional qualitative methods] will identify strategies to address the barriers/enablers identified in Study 1. Experts who have successfully implemented in-hospital PA practices and the subsample identified in Study 1 will be invited for interviews. Study 3 [longitudinal cohort mixed-methods] will test in-hospital PA practices and implementation tools (e.g., training/education materials) developed using research, theory, findings from Study 1 and Study 2, and advisory board input. The impact of in-hospital PA practices on patients' health-related outcomes and PA behaviour and the fidelity and acceptability of the in-hospital PA practices and implementation tools will be evaluated.

**Impact on practice or Results:** Project underway.

**Discussion or Conclusions:** This project will address a service gap in pediatric oncology, add evidence for the feasibility of in-hospital PA practices, and may promote PA behaviour and health-related outcomes for children in pediatric oncology programs in Alberta. The outputs from this project have the potential to extend and improve service delivery and health-related quality of life for children undergoing treatment for cancer across Canada.

### 115 | Identifying and describing sustainable physical activity programs for children diagnosed with cancer: results from an international environmental scan

*Amanda Wurz<sup>1</sup>, Julia Daeggelmann<sup>2</sup>, Natalia Albinati<sup>1</sup>, Liam Kronlund<sup>1</sup>, Carolina Chamorro-Viña<sup>1,3</sup>, S. Nicole Culos-Reed<sup>1,4</sup>*

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**Background/rationale or Objectives/purpose:** To identify and describe sustainable physical activity programs for children diagnosed with cancer.

**Methodology or Methods:** Five data sources were used to identify established and ongoing programs offering physical activity to children diagnosed with cancer. Upon confirming eligibility, correspondents were sent a series of open-ended questions via email. Responses were analyzed using qualitative content analysis and were summarized descriptively and narratively.

**Impact on practice or Results:** Forty-six programs, in 10 countries, were identified and qualitative data was obtained for 36 programs, in 8 countries. Internationally, most programs are taking place in Europe, and are offering physical activity to children with mixed cancer types, at different stages of the cancer-trajectory, across a range of settings (e.g., community, hospital). The majority allow children to bring a support person (e.g., sibling, friend) and require medical clearance prior to participation. All programs are professionally supervised; however, there is considerable variability with regards to other program characteristics (e.g., funding structure, physical activity intensity and frequency).

**Discussion or Conclusions:** Results provide a first look at where and in what capacity physical activity programs are being offered to children diagnosed with cancer and provide guidance for those seeking to develop/implement physical activity programs themselves. Moreover, findings underscore the necessity of establishing international networks, conducting

multi-site projects, and engaging in public relations to ensure high-quality research is being conducted and translated. Moving forward, concerted efforts are required to ensure all children diagnosed with cancer have access to physical activity programs as a means of enhancing their health and quality of life.

### 101 | Ethical Challenges When Adolescent Cancer Patients Refuse Treatments Based on Cultural/Religious Reasons

*Philip Crowell*

*BC Children's Hospital, Vancouver, Canada; University of British Columbia, Vancouver, Canada*

**Background/rationale or Objectives/purpose:** In pediatric oncology there can be complex ethical challenges when adolescent oncology patients refuse cancer treatment plans based on cultural/religious grounds; and when patients and parents seem to lack capacity for significant decision making. The presentation offers a process and an ethics framework for making for assessments and interventions.

**Methodology or Methods:** The method is to utilize a standard ethics decision making framework instrument. Key concepts such as patient competency/capacity, parental authority and best interest standards, "the harm principle" are explicated providing guidance outlining care options.

**Impact on practice or Results:** The intervention is a process contingent upon current national, provincial legislation and policies of health authorities as well as national healthcare codes of ethics. Our type of case details patients diagnosed with a very treatable form of brain cancer and yet there is resistance to the requisite steps to move forward with life-saving treatment. Utilizing the ethics framework will impact practice by creating a multi-faceted strategy for dealing with this type of complex case and will focus on key ethical questions: does the patient have capacity to make the decision to pursue or refuse treatment and is she/he unduly influenced?

**Discussion or Conclusions:** What are the team's obligations since the patient is still a minor under government legislation? What happens if pediatric oncologists decide to call the Ministry of Child Protection to force a patient into treatment? In conclusion, strategies/approaches (cultural brokers, spiritual care) are offered to further positive outcomes for patient care and to further relational ethics.

### 98 | Music Meet-Up: A novel group therapy intervention for adolescents and young adults with cancer (AYA)

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**Background/rationale or Objectives/purpose:** Objectives/Purpose: AYA face marked psychosocial challenges, including increased isolation from peers, disruptions to identity formation, and emotional distress. Few evidence-based interventions exist addressing AYA's unique needs. This study aims to determine feasibility and preliminary effectiveness of a novel, developmentally-informed group therapy using music as a coping tool.

**Methodology or Methods:** Methods: A 6-week music therapy group was held at Princess Margaret Cancer Centre in Toronto, Canada for patients aged ≤ 39 (any stage and cancer type). Feasibility data was collected, including referral information, attendance, and resources required. Participants completed pencil and paper measures prior to the start and upon completion of the group. Quantitative scales assessed social isolation, depression, anxiety and distress. Qualitative surveys evaluated the patient experience.



**Impact on practice or Results:** Results: Of 16 referrals received, 12 participated in the group, and 10 in the study. At least 10 attended all six sessions. Resources included space, instruments, office supplies, and co-facilitators' time. Mean age was 35.5 (range 24–42) and 7/10 identified as female. Cancer diagnoses included lymphoma, breast, testicular, colon, CNS, and endometrial. Quantitative data will be aggregated with future iterations of the group to achieve adequate statistical power. Qualitative data was analyzed using summative content analysis, and through coded categories revealed themes of connectedness, enjoyment, accessibility, and self-expression.

**Discussion or Conclusions:** Conclusion and Clinical Applications: Positive initial impressions from participants, coupled with feasible methods of delivery, make this pilot a promising, innovative intervention addressing gaps in AYA psychosocial care. Further research directions include quantitative and more in-depth qualitative evaluation, as well as expansion to other sites.

### 65 | Perceptions of Participating in Family-Centered Fertility Research among Adolescent and Young Adult Males Newly Diagnosed with Cancer: A Qualitative Study

Leena Nahata<sup>1,2,3</sup>, Taylor Morgan<sup>1</sup>, Keagan Lipak<sup>1</sup>, Olivia Clark<sup>1</sup>, Nicholas Yeager<sup>2,3</sup>, Sarah O'Brien<sup>4,3</sup>, Stacy Whiteside<sup>2</sup>, Anthony Audino<sup>2,3</sup>, Gwendolyn Quinn<sup>5</sup>, Cynthia Gerhardt<sup>1,3</sup>

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**Background/rationale or Objectives/purpose:** Over half of male childhood cancer survivors experience infertility after treatment, which impairs future quality of life. Sperm banking rates remain low, and little is known about how adolescent and young adult (AYA) males and their families make fertility preservation (FP) decisions. To date, prospective fertility research at cancer diagnosis has been limited due to concerns about burdening families. This qualitative study examined patients'/parents' perceptions of participating in a pilot study testing a new FP decision tool among AYA males newly diagnosed with cancer.

**Methodology or Methods:** Forty-four participants (19 mothers, 11 fathers, 14 male AYAs 12–25 years old) from 22 families completed brief assessments at diagnosis (before beginning treatment), including an FP decision tool, and subsequently participated in a qualitative interview exploring the impact of study participation. Verbatim transcripts were coded using the constant comparison method using selective coding.

**Impact on practice or Results:** 89% of mothers, 63% of fathers, and 71% of AYAs reported positive effects of participation. 11% of mothers, 36% of fathers, and 29% AYAs were neutrally affected by participating; none reported a negative effect. The three main subthemes among those who reported positive effects were: participation promoted deeper thinking; participation influenced conversations; altruism. Inter-rater reliability was excellent (kappa coefficient = 0.96).

**Discussion or Conclusions:** This study demonstrates it is feasible and beneficial to implement family-centered FP research/decision tools among AYA males newly diagnosed with cancer. AYAs and their parents noted participating in the study helped them think about and discuss FP. Facilitating FP decisions before treatment may mitigate future regret and optimize psychosocial and reproductive outcomes.

### 56 | Long term hospital stay and psychiatric problems - A case report

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**Background/rationale or Objectives/purpose:** There is a high prevalence of psychiatric problems in long term inpatients in general hospital. It is complicated by the medical co-morbidity which warrants a long term stay. Psychiatric diagnoses can present and change depending on the severity of medical co-morbidity. It is imperative for clinicians to monitor patients for psychiatric problems in the long term

**Methodology or Methods:** Regular history taking from the patient, corroborative history from family and collaboration with the nurses and other specialists treating the patient becomes essential

**Impact on practice or Results:** Open mindedness and readiness to diagnose and treat psychiatric problems along with close collaboration and support not only for patient, but for treating team has a better prognosis for the patient

**Discussion or Conclusions:** Readiness and willingness to diagnose and treat psychiatric issues Collaboration with and support to the treating team

### 46 | Long-term effects of chemotherapy on gut microbiota, and metabolic, immune, psychological and cognitive parameters in young adult cancer survivors: A Progress Report

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**Background/rationale or Objectives/purpose:** The gut microbiome is an important modulator for immune, metabolic, psychological and cognitive function. Chemotherapy adversely affects the gut microbiome, and alters physiological and psychological function. Cancer among young adults has risen 38% in recent decades. Understanding chemotherapy's long-term effects on gut microbiota and psycho-physiological function is critical to minimize survivors' risk for chronic health problems, but remains unexamined.

**Methodology or Methods:** This longitudinal study investigates chemotherapy induced long-term gut dysbiosis, and associations between gut microbiota, and immune, metabolic, cognitive and psychological parameters using data collected at < 1 month (T1), 3 months (T2), and 6 months (T3) post-chemotherapy. Participants will be 18–39 year old blood or solid tumor cancer survivors (N = 50), and a healthy sibling or individual cohabiting with the patient as a control (N = 50). Gut microbiota composition will be measured from fecal samples. Psychological and cognitive measures will include depression, anxiety, PTSD, pain, and social and cognitive function. Dual-energy X-ray Absorptiometry (DXA) will measure fat and lean mass. Pro-inflammatory cytokines will be assayed from blood serum, and long-term cortisol will be assayed from hair samples.

**Impact on practice or Results:** Regression and linear mixed model analyses will investigate associations within time points (T1 – T3), between groups, and covariates with gut microbiota, cognitive, psychological, and physiological parameters.

**Discussion or Conclusions:** Knowing what bacterial species are depleted after chemotherapy is crucial as future studies could aim to help survivors by co-administering specific health promoting bacteria (i.e. probiotics), possibly preventing or reversing the psycho-behavioral, immune and metabolic deficits often seen following chemotherapy, ultimately leading to reduced symptom burden and improved quality of life.

## C. CANCER CARE IN OLDER ADULTS

### 734 | The meaning of Hope: Hope and distress among older patients with cancer

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**Background/rationale or Objectives/purpose:** As a result of the aging of the world population and the development of more effective medical treatments for cancer, the population of older cancer survivors is expected to grow rapidly. Not much is known about hope as resource and the nature of hope and its relation to distress among older cancer patients.

**Methodology or Methods:** This study surveyed 242 patients  $\geq 65$  years old. Measures included: Depression measure (Geriatric Depression Scale); Distress (Distress Thermometer); Standard Hope measure (Adult Hope Scale) and; Specific questions about the nature and content of hopes of the patients. Levels of hope were compared by means of ANOVA between age groups.

**Impact on practice or Results:** Distress and depression were positively correlated and hope was negatively correlated to the age of the patients. Hopes to stay alive and to be less tired were the hopes with the highest negative relations to age. Among the age group of oldest old ( $\geq 86$  years old) the highest levels of hope were not to be in pain and to die without pain while at the younger age group (age 65 to 85) the highest levels of hope was of the hope to be with the family when reaching death.

**Discussion or Conclusions:** The wishes, values, and attitudes of older patients may be different from those of younger patients and may be in conflict with ethical and medical considerations. Health care teams should understand and address the unique needs of each individual and to discuss and respect the views of older patients in order to achieve mutual understanding and agreed-upon treatment plan.

## 729 | Who will support the care givers? The role of older patients with cancer as supporting their own spousal caregivers

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**Background/rationale or Objectives/purpose:** Purpose: With the aging of the population, more and more older cancer patients will be taken care of at home by spousal caregivers. It is accepted that in general spousal caregivers are supporting the patients often at the expense of their own physical and emotional health. Nevertheless, little is known about the quality of life specifically among spousal caregivers of older cancer patients. The aim of the current study is to explore the variables related to emotional toll of spousal caregivers for cancer patients aged 65 – 85 year

**Methodology or Methods:** This study surveyed 242 spousal caregivers of patients  $\geq 65$  years old, diagnosed with cancer, treated with curative or palliative intent, and within 6 months of treatment at enrollment. Measures included: Depression measure (Geriatric Depression Scale); Distress (Distress Thermometer) and; Social support (The Cancer Perceived Agents of Social Support). Logistic regression analyses were used in order to identify predictor of clinical depression and distress.

**Impact on practice or Results:** Among the caregivers the frequency of clinical depression and distress was 16.5% and 28% respectively. Higher levels of spousal support (support from the patients) and of friends were associated with lower levels of depression and distress. Interestingly, increasing patient age was also associated with reduced levels of caregiver depression.

**Discussion or Conclusions:** Clinicians can utilize the fact that caregiver's perceived spousal support may have a positive effect on

caregivers' levels of depression. Older patients may be encouraged to support their own caregivers. thus, empowering both older patients and their spousal caregivers to confront the challenges of cancer treatment into advanced age.

## 657 | Comparison of Two Administration Methods for Measuring Functional Fitness in Older Cancer Survivors

*Alexis Whitehorn, Catherine Sabiston, Daniel Santa Mina, Linda Trinh University of Toronto, Toronto, Canada*

**Background/rationale or Objectives/purpose:** Few older cancer survivors (65+ years) are meeting physical activity (PA) guidelines of 150 minutes/week of moderate-to-vigorous PA. Barriers include fatigue, time constraints, age, poor baseline health status, comorbidities, functional limitations, and cognitive decline. Limited access to supervised exercise testing may hinder participation in exercise programming. Therefore, home-based programs may be a viable approach to increasing PA in this population. For accurate exercise prescriptions, physical functioning may be evaluated using the senior fitness test (SFT), however, no study has evaluated the accuracy of self-administration of the SFT compared to supervised, in-person administration. The purpose of this study is to compare the accuracy of self-administered SFT at home versus supervised administration by an exercise physiologist.

**Methodology or Methods:** This study is a within-subjects design with 29 older cancer survivors over the age of 65. Participants will perform the SFT on two separate occasions: (1) self-administered and unsupervised in home environments; and (2) supervised and administered by an exercise physiologist. This SFT will include a 30-second chair stand and 30-second arm curl to measure strength, as well as 6-minute walk test and 2-minute step test to measure aerobic endurance.

**Impact on practice or Results:** In progress.

**Discussion or Conclusions:** The SFT administered at home is anticipated to be an efficient, accurate, and feasible method to test physical functioning without supervision in cancer survivors. Completing a self-administered home-based SFT will potentially reduce the need for supervised testing, enabling accurate PA prescriptions for home-based programs leading to greater participation and dissemination of exercise programming in older cancer survivors.

## 317 | Challenges in Psychiatric Oncology: Clinical Gray Areas and Dilemmas Cancer-Related Cognitive Impairment

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**Background/rationale or Objectives/purpose:** Cancer-related cognitive impairment (CRCI) can occur during any phase of cancer and its treatment and can significantly affect patients' quality of life. In a subset of up to 30% of patients, CRCI becomes persistent. Furthermore, the etiology of CRCI remains unclear, posing a challenge to the identification and use of appropriate interventions. Given the effects of persistent CRCI on patients' role functioning, its treatment is paramount to comprehensive cancer care.

**Methodology or Methods:** Few evidence-based options for treatment of CRCI exist. Physicians often turn to psychostimulants to help mitigate symptoms of cognitive dysfunction. However, many physicians are wary of these medications, citing concern about abuse or dependence. Others worry that combining psychostimulants with benzodiazepines and opioids - medications commonly used during cancer treatment - is poor medical practice, as these agents have opposing effects. The fact that evidence for psychostimulants in treatment of CRCI is mixed lends additional controversy to their use.

**Impact on practice or Results:** This lecture will focus on the tension between evidence, practice, safety, and quality of life in the decision to prescribe psychostimulants to cancer patients. It will provide participants

with tools to determine the best care options for their patients. The newest concepts surrounding the etiology and identification of CRCI will also be discussed.

**Discussion or Conclusions:** Treating CRCI can lead to pharmacologic challenges for physicians. While avoidance of psychostimulants may seem the intellectually prudent choice, in this patient population that avoidance must be reconsidered. Future research should focus on patient risk factors and preventive treatments for CRCI.

### 186 | Development of a nursing practice scale for cancer pain relief for older adults with cognitive impairment-Self evaluation by nurses

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**Background/rationale or Objectives/purpose:** This study was aimed to develop a scale to measure the sense of difficulty in nursing practice for cancer pain relief for older adults with cognitive impairment.

**Methodology or Methods:** The scale was drafted from study and was modified by Cancer nursing specialists. This scale consists of one question of confidence in nursing practice and difficulties in nursing practice for cancer pain relief, a total of 48 questions in six groups. Data are expressed as mean and calculated Cronbach's alpha.

**Impact on practice or Results:** The total of 68 participants comprised 2 men and 66 women which the valid response rate 100%. Their mean age was 35.4 years old. Number of years cancer nursing experience mean 8.8 years, dementia nursing experience 10.0 years. Nurses were divided into three groups based on their confidence in nursing practice for relieving cancer pain. 67.6% in Low confidence group, 30.9% in Medium group, and 1.5% in High group. Cronbach's alpha for six groups were 0.903 for "assessment", 0.805 for "grab", 0.86 for "direct care", 0.658 for "predict", 0.697 for "judge with others", and 0.721 for "realize".

**Discussion or Conclusions:** The surface validity and the content validity were recognized about the nursing practice scale for cancer pain relief for elderly cancer patients with cognitive decline in self-evaluation of nurses. The construct validity was supported to a certain extent from this survey. From now on, it is necessary to increase the number of investigation subjects and perform confirmatory factor analysis.

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## D. CANCER ACCESS, INEQUITY AND DIVERSITY

### 752 | Breast Cancer Screening in Women with Schizophrenia: A Systematic Review and Meta-Analysis

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**Background/rationale or Objectives/purpose:** Women with schizophrenia appear to be diagnosed with later stage breast cancer than women without mental illness. We aimed to review and quantify the differences in rates of screening mammography for women with schizophrenia and other psychotic disorders compared to the general female population.

**Methodology or Methods:** A systematic literature search was conducted in PubMed, Embase, Web of Science and PsycInfo databases from inception to September 14, 2018. The search strategy included search terms for breast cancer, mammography, schizophrenia and psychosis. Studies were eligible for inclusion if they reported on the primary outcome of screening mammography rate for women with schizophrenia and other psychotic disorders compared to rates in the

general population. Two reviewers independently screened and evaluated eligible studies. Preferred Reporting Items for Systematic Reviews and Meta-analyses guidelines were used for abstracting data. The main outcome measure was rate of screening mammography for women with schizophrenia and psychotic disorders versus rate in comparable female population without these diagnoses. A random effects model meta-analysis was performed.

**Impact on practice or Results:** From 304 abstracts reviewed, 11 studies met the inclusion criteria, representing 25,447 women with diagnoses of schizophrenia or psychosis across 4 countries. The meta-analysis yielded a pooled OR of 0.51 (95% CI 0.42–0.60, P

**Discussion or Conclusions:** Women with schizophrenia and other psychotic disorders are about half as likely to receive screening mammography as the general female population. Interventions are needed to promote equity in breast cancer screening for this population.

### 678 | Breast Cancer Screening among recently immigrated Canadian women: Are Socio-Cultural factors becoming barriers to employing this preventative measure? Results from a qualitative study

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**Background/rationale or Objectives/purpose:** The use of mammography screening remains low among immigrant women who lived in Canada for less than 10 years compared to the Canadian-born women and to immigrant women who lived in Canada for more than 10 years (42% vs. 70%). This qualitative study was based on personal interviews and was designed to identify the barriers and challenges of the use of mammography screening among recent immigrant women aged 50 to 69 from Northwest Africa (Tunisia, Algeria, and Morocco) currently residing in Montreal.

**Methodology or Methods:** Drawing upon the Health Belief Model, twelve individual interviews were conducted in Arabic or French (according to women's preference). Each semistructured interview lasted between 60 and 90 minutes. Interview data were translated into English and analyzed using the QDA Miner software.

**Impact on practice or Results:** Maghrebi immigrant women in Montreal had similar barriers to breast cancer screening than what has been found in the literature: lack of knowledge, erroneous beliefs about breast cancer and screening (taboo, fatalism, karma, fear, etc.), lack of trust in health care, etc. All results were grouped in 4 major themes: "Knowledge", "Attitudes", "Social support", and "Practices and experiences with breast cancer screening".

**Discussion or Conclusions:** Our study showed that the most important barrier to accessing mammography services was suboptimal recognition and accommodation of the unique ethno-cultural needs of Maghrebi immigrant women by the healthcare system. These difficulties were further amplified by poor access to family doctors and healthcare system as well as the women's economic circumstances.

**Keywords:** breast cancer screening, mammography, recent immigrant women, North African women, Maghrebi women

### 668 | LivingOutLoud.Life and vivreAfond.ca – Shattering the Silence for Young Adults and Teens Living with Advanced Cancer

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**Background/rationale or Objectives/purpose:** The Canadian Partnership Against Cancer report Adolescents & Young Adults with Cancer, 2017 states "adolescents and young adults (AYAs) with cancer face



distinct challenges for which specialized and tailored system responses are needed.” The needs of AYAs with advanced illness are not well understood, their concerns are not being addressed, there are few programs available and their voices are largely silent - until the launch of [www.LivingOutLoud.Life](http://www.LivingOutLoud.Life) and [www.vivreAfond.ca](http://www.vivreAfond.ca) (LOL/VAF).

**Methodology or Methods:** With funding from CPAC, The Canadian Virtual Hospice convened AYAs living with advanced illness to identify gaps in information and support and to envision a solution. The AYAs identified six thematic areas (relationships, self, daily life, sex and fertility and decisions), developed multimedia content and engaged clinical experts to create the world's only webspace grounded in their lived experience with advanced illness and that is evidence-informed.

**Impact on practice or Results:** Several barriers impede AYAs from sharing issues with healthcare providers. This silence impacts holistic, quality care. LOL/VAF helps healthcare providers to better understand and respond to the realities of being young and living with an advanced illness.

**Discussion or Conclusions:** LOL/VAF underscores the power of personal narratives in communicating health information, empowering diverse populations living with illness and assisting healthcare providers in understanding unique health needs. Attendees will become familiar with the depth and breadth of the often unmet needs of AYAs and better understand these issues to deliver the patient care that can make a difference.

### 659 | The Power of Shared Voices: Lessons learned from engaging immigrants, refugees and Indigenous people in knowledge tool development

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**Background/rationale or Objectives/purpose:** Healthcare services are often out of sync with cultural, spiritual and religious perspectives on health, death, and grieving. This dissonance affects attitudes and behaviours in seeking and utilizing health services and can lead to poor communication, misunderstanding, and anxiety as patients, families and healthcare providers interact.

**Methodology or Methods:** To address a gap in cultural-specific information the Canadian Virtual Hospice (CVH), in collaboration with 40 pan-Canadian partners launched LivingMyCulture.ca (LMC). LMC includes 650 videos clips of members of 11 cultures sharing stories about the intersection of culture, spirituality, and religion with their experiences of healthcare, life-limiting illness, and grief. It is an educative tool for healthcare providers to improve their competency in providing culturally responsive care and an educational resource and source of support for patients and families.

**Impact on practice or Results:** CVH engaged 58 Canadians from diverse cultural backgrounds and locations to identify needs, envision solutions, and contribute to online knowledge tools. However, engaging patients and families from underserved populations in tool development comes with significant challenges. Navigating these challenges and sharing the stories and perspectives of diverse patients and families have led to the development of successful tools, five national awards and new investments that will enable CVH to further this work.

**Discussion or Conclusions:** This workshop will introduce LMC and share strategies and lessons learned from engaging and collaborating with diverse, underserved populations to build knowledge tools. Challenges and successes encountered in engaging the lay public will be discussed to help develop a better understanding of what successful engagement looks like.

### 488 | Advancing Equity in Cancer Care for Serious Mental Illness: Research, Clinical Care, and Coalition Building

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**Background/rationale or Objectives/purpose:** Individuals with serious mental illness (SMI) experience inequities in cancer care and research which contribute to increased cancer mortality. To improve cancer outcomes for people with SMI, we need to develop, evaluate, and disseminate innovative approaches to clinical care, research, and advocacy that foster academic and community partnerships.

**Methodology or Methods:** Informed by qualitative research and collaborative care principles, we developed and successfully piloted the BRIDGE intervention for SMI and cancer. BRIDGE is population-based (we systematically identify SMI at cancer diagnosis), person-centered (we meet people where they are, assess hopes and fears, and address barriers to care), and team-based. BRIDGE includes proactive psychiatry consultation, case management, and collaboration with oncology to integrate cancer and mental health treatment. Additionally, we developed a verbal consent process and conducted visits across settings to support enrollment and trial completion. We are now investigating the impact of BRIDGE on cancer care in a randomized trial.

**Impact on practice or Results:** We expanded our team to include a cancer navigator with training in SMI to build capacity to conduct home visits and partner with community mental health. In collaboration with diverse stakeholders we established the Cancer and Mental Health Collaborative, a 600 member coalition dedicated to decreasing disparities in cancer care.

**Discussion or Conclusions:** As psycho-oncology clinicians and researchers, we can advocate for proactive psychiatry consultation for patients with SMI and think creatively about how we can engage vulnerable populations and design inclusive trials. Collaborating with a stakeholder coalition can inform the research agenda, increase reach to underserved communities, and improve cancer outcomes.

### 452 | Cancer Patient Autonomy & Decision-Making in Early-Phase Trial Recruitment

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**Background/rationale or Objectives/purpose:** Early-phase cancer clinical trials (CTs) require special attention to informed consent procedures in order to ensure participants' understanding of the risks and benefits, and evolving safety and efficacy data. This qualitative study explores the factors that influence patients' decisions about participating in early-phase CTs through an ethics lens.

**Methodology or Methods:** Using an interpretive descriptive design, semi-structured interviews were conducted with 18 adult patients with advanced cancer who had been approached to participate in a phase 1 CT. Additionally, 3 family members and 6 CT personnel were interviewed to illuminate the social dynamic and relational factors influencing patient decision-making. Interviews were transcribed verbatim and analyzed using Sherwin's theory of relational autonomy and constant comparative analysis.

**Impact on practice or Results:** Results demonstrate an emerging core category of 'You don't have a choice', which was informed by a life versus death narrative, illuminating the desperation participants felt when standard of care was no longer an option. Supporting this core category were two themes that illustrate the personal and relational factors that influenced patients' decisions about taking part in early-phase CTs: 1) Being provided with hope; 2) Not ready to die.

**Discussion or Conclusions:** Findings highlight the paradoxical nature of achieving informed consent in a circumstance described by patients as life versus death. Intertwined in the decision-making process was interpersonal dynamics that contributed to feelings of hope and desperation. These factors will inform the development of a tool to assist

patients in making an informed decision about CT participation that reflects their beliefs and values.

#### 451 | Use of Patient Centered Language and Critical Word Selection in Describing Persons With Cancer and/or Their Care

*Marisa Quiery, Donna Murphy, Michelle Riba, Julie Brabbs, Irene Turkewycz, Nicole Fauwett*

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**Background/rationale or Objectives/purpose:** Media, medical professionals, and society often use militaristic language and metaphor describing those with cancer as fighters, survivors, and warriors. Not all, of those people are comfortable with evocative descriptors. Militaristic language as a homogeneous voice in cancer care poses potential threats to the psychosocial well-being through use of polarizing language. Competence around critical word selection in cancer essential assessment tool for all. The implementation of training around language selection creates the opportunity for individualizing how patients view and understand their diagnosis for clinicians. Language, imagery, and metaphor offer a means to describe, view and internalize a diagnosis. Professionals equipped with skills to cater their words to the needs of patients and empower them to discuss health in effective ways is critical. The use of marketing materials, panels, resource tools, and conversation are methods employed to shift the cultural language in cancer care and begin to use a patient-centered approach.

**Methodology or Methods:** A constructed mixed methods approach: Data collection, checklist, literature review and needs assessment from a patient centered audience.

**Impact on practice or Results:** This inquiry explores language that persons with cancer prefer, in reference to their cancer. We suggest language opportunities/threats when talking, writing, and describing cancer for others. We discuss how polarizing words, may be interpreted/perceived that potentially impact information sharing about cancer, to others.

**Discussion or Conclusions:** Shift the culture of language to fit needs  
Polarizing language impact on person's current/future health  
Avoid references that are not congruent with patients' perspective

#### 345 | Occupational rehabilitation of male breast cancer patients: motifs, experiences and implications

*Kati Hiltrop<sup>1,2</sup>, Paula Heidkamp<sup>1,2</sup>, Sarah Halbach<sup>1,2</sup>, Evamarie Midding<sup>1,2</sup>, Christoph Kowalski<sup>3</sup>, Nicole Ernstmann<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** As work can give meaning and identity, provide financial security and allow social participation, the return to work (RTW) represents an important part of the rehabilitation process of survivors. Until now, RTW processes among male breast cancer patients (MBCPs) are not fully understood. Therefore, the analysis aims to investigate motifs, experiences and outcomes regarding RTW from the MBCPs' perspective.

**Methodology or Methods:** Data from the mixed-methods N-MALE study (Male breast cancer: Patients' needs in prevention, diagnosis, treatment, rehabilitation, and follow-up care), conducted 2016–2018 in Germany, were used for a secondary analysis. The present explorative qualitative content analysis considered the data collected by semi-structured interviews with MBCPs (n = 27). A key word search enabled to identify n = 14 interviews with work-related content.

**Impact on practice or Results:** Eight motifs for RTW were found: desire for normalcy; distraction; need for activity; social contacts; work

as a source of pleasure; financial reasons; not perceiving oneself as sick; having a work with low physical effort.

MBCPs mainly reported positive experiences with their workplace from diagnosis until RTW. However, also stigmatization occurred.

The aftermath of the disease and its treatment lead MBCPs to experience versatile changes in their productivity i.e. due to fatigue, forgetfulness or emotional burden.

**Discussion or Conclusions:** New insights on motifs and experiences in the context of occupational rehabilitation specific for MBCPs were generated. The results on implications indicate special support needs in the aftermath of the return, when long-term effects of the disease and treatment limit productivity.

Note: Results may be presented partially on a German health care research conference in October 2019.

#### 325 | A cross-sectional study of cancer stigma and the cause of cancer in a sample of Japanese adults

*Emi Takeuchi<sup>1,2,3</sup>, Rina Miyawaki<sup>4</sup>, Daisuke Fujisawa<sup>5</sup>, Hiroko Yako-Suketomo<sup>6</sup>, Koichiro Oka<sup>7</sup>, Miyako Takahashi<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Reducing the stigma of cancer is an international and domestic goal. Stigma is subject to social context, but little is known of what the general population thinks of cancer amongst Japanese society. Therefore; this study aimed to explore Japanese attitudes toward cancer by comparing cancer stigma with other countries and identifying what they think causes cancer.

**Methodology or Methods:** We conducted an online survey targeting the general population aged 20–65. We used the Japanese version of the Cancer Stigma Scale to evaluate cancer stigma. Also, we asked participants to put the following items in order of what they think causes cancer most; lifestyle, chance, aging, environmental factors, and genetic inheritance. Cancer stigma was compared with Marlow's study participants in the UK by t-test; while causes of cancer were assessed using the Friedman test.

**Impact on practice or Results:** A total of 450 responses were included in the data analysis. The analysis demonstrated that the cancer stigma was significantly higher in Japan than in the UK. There were significant differences in the ratings of answers in the questionnaire of the causes of cancer. The causes of cancer are ranked in the following order; lifestyle, genetic inheritance, environmental factors, aging and chance (Mean rank: 2.16, 2.45, 3.25, 3.30 and 3.84 respectively). Wilcoxon signed-rank tests reflected significant differences in pair comparisons except for the comparison between environmental factors and aging.

**Discussion or Conclusions:** Although the number of cancer patients has increased in Japan; this study confirmed that cancer is stigmatized and considered to be caused by lifestyle rather than by chance.

#### 280 | Dying at the Margins: Justice and Healing through Mindful Presence

*David Moller*

*Anne Arundel Medical Center, Annapolis, USA*

**Background/rationale or Objectives/purpose:** The purpose of this presentation is to give a voice to an often forgotten population: the urban homeless near the end of life. It will craft a portrait of what it is like to live and die at the margins and explore:

Indignities that are unique to disadvantaged populations Anger, suspicion, and mistrust that characterize relations with the health system Resilience and creative adaptability that allow folks to “get along” Strong faith.

**Methodology or Methods:** This presentation will use the genre of narrative medicine. (Results presented in *Dying at the Margins*: Oxford University Press, 2019) It will draw on oral and photographic narratives to tell the story of a person living homeless with small-cell lung cancer and how solidarity with his palliative care team transformed his end-of-life journey from one that was grim into an experience that was filled with dignity, meaning, and support.

**Impact on practice or Results:** The presentation will argue that in order to optimally serve patients and families who live at the outskirts, skills in cultural competence and cultural humility must be developed.

**Discussion or Conclusions:** Ultimately this work is about advancing a much needed call to action for healthcare providers in caring for marginalized populations. It conveys that in order to best serve the needs of disadvantaged populations we must understand the trauma that results of being bereft of social connections, economic resources, and political empowerment and develop practices in caring that account for the circumstances that disempower both patients and their loved ones.

### 234 | Testing an Evidence-based Stress Management Intervention for Rural Spanish-speaking Latina Breast Cancer Survivors

*Anna Napoles<sup>1</sup>, Jasmine Santoyo-Olsson<sup>2</sup>, Anita Stewart<sup>2</sup>, Steven Gregorich<sup>2</sup>, Liliana Chacon<sup>2</sup>, Carmen Ortiz<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** Adapt and test in community settings a peer-delivered stress management intervention among rural Spanish-speaking Latina breast cancer survivors (LBCS).

**Methodology or Methods:** Based on formative research with community partners, we adapted a cognitive-behavioral stress management intervention to address the needs of rural Spanish-speaking LBCS throughout survivorship. We recruited rural Spanish-speaking Latinas with non-metastatic breast cancer. Using a randomized controlled trial design, women were randomized to receive the program immediately or wait 6 months (control group). Trained peers delivered the 10-week intervention that taught cognitive reframing and behavioral skills for managing stress. Using intention-to-treat analyses, repeated-measures linear regression models estimated changes in slope between groups, controlling for site. Primary outcomes were breast cancer-specific quality of life and distress assessed at baseline, 3-months, and 6-months; secondary outcomes were self-assessed skills targeted by the intervention.

**Impact on practice or Results:** Of 153 participants, 76 were randomized to the intervention and 77 to the control group; 92% were retained at 6-months. Mean age was 54.8 years (SD = 10.5), 69% had less than high school education, more than half had only Medicaid or no insurance, and 48% reported financial hardship in the past year. We observed greater reductions in anxiety ( $\beta = -0.336$ ;  $P < .05$ ) and greater improvements in ability to relax at will ( $\beta = 0.659$ ;  $P < .001$ ) in the intervention vs control group.

**Discussion or Conclusions:** Trained peers can successfully deliver psychosocial health programs in community settings, and these interventions can reduce anxiety and improve the ability to relax at will among rural Latina breast cancer survivors. Recruitment of vulnerable Latina cancer survivors for psycho-oncological research is feasible.

### 190 | A Global Perspective: Embracing Views about Cancer of Older Latino Immigrants

*Iraida Carrion LCSW<sup>1</sup>, Tania Estapé<sup>2</sup>, Manilee Neelamegam<sup>1</sup>, Jane Roberts<sup>3</sup>, Jorge Estapé<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Older Latino immigrants experience social inequalities and barriers due to their limited English language proficiency and access to health care in the USA. However, their perspective is highly valued within their family system. Despite this, little is known about Latinos 60 years+ and the transmission of knowledge, beliefs, and attitudes about cancer to family members and friends. Understanding their perspectives regarding cancer is essential given their role within the global context.

**Methodology or Methods:** The qualitative study explored the knowledge, beliefs, attitudes, and advice older Latino men and women provide to family members and friends about cancer. The data represents individuals residing in the Greater Tampa-Bay area ( $n = 200$ ). Recruitment occurred in community-based settings and interviews were conducted in Spanish and transcribed into English. Qualitative data were analyzed using a constant comparison method and coded in ATLAS.ti.

**Impact on practice or Results:** Many themes emerged in the study. The participants believe a cancer diagnosis is beyond the individual's control and that it is in God's hands. They recommend that family and friends be careful in the decision-making process of choosing a doctor, as it is crucial for the doctor to provide proper treatment options. Lastly, their advice to others is to remain positive in the face of a cancer diagnosis.

**Discussion or Conclusions:** The role of older immigrant Latinos in the transmission of knowledge about cancer is noteworthy. They manifest meaning-based beliefs and coping strategies that can assist friends and family in dealing with their cancer diagnoses, treatment options, and access to care in psychosocial oncology.

### 166 | Examining Cancer Prevention and Diagnosis Beliefs among Older Latinos in the Central Florida

*Manilinee Carrion<sup>1</sup>, Tania Estapé<sup>2</sup>, Man Neelamegam<sup>3</sup>, Jane Roberts<sup>4,5</sup>, Jorge Estapé<sup>6</sup>*

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**Background/rationale or Objectives/purpose:** Due to poor data and an ageing Latino population, it is important to examine older Latinos' beliefs regarding cancer prevention and diagnosis to ensure effective care.

**Methodology or Methods:** A survey was developed and administered in Spanish to a convenience sample of older Latinos to explore their beliefs about cancer prevention and diagnosis. Univariate analysis showed population characteristics, and frequencies showed responses to questions on cancer prevention and diagnosis. The effect of age, educational-level, US length of stay, and marital status on cancer-related beliefs was assessed using logistic regression.

**Impact on practice or Results:** Participants' mean age was 67.9 ( $N = 168$ ; 65.5% female), while 56.5% were married or cohabiting, and 35.5% had a tertiary education. Most were from South America (46.7%), and mean of US length of stay was 25.8 years. Most (50.3%) said that cancer could be prevented, 62.7% said it could be diagnosed early, 61.1% said prevention and diagnosis were different, and 98.1% said that tobacco caused cancer. However, 10.1% said that tobacco use only affected the smoker. Education predicted knowledge of cancer prevention and diagnosis. Participants with elementary and high school educations were more likely than those with a college degree to say that prevention and diagnosis were the same ( $b = 1.69$  and  $b = 1.49$ , respectively;  $p < 0.01$ ). Those with elementary educations were less likely to agree that secondhand smoke causes cancer ( $b = -1.87$ ,  $p < 0.01$ ).



**Discussion or Conclusions:** Older Latinos' beliefs about cancer prevention and diagnosis vary depending on their educational level. Educational information about cancer prevention and diagnosis should incorporate these findings.

## 27 | Project: Patient Stories - A Tool to Support Engagement of Pacific Cancer Patients with Mainstream Medicine

*Karin Jansen, Laura Thompson*

*Cancer Support: Psychology and Social Work, Counties Manukau Health, Auckland, New Zealand*

**Background/rationale or Objectives/purpose:** At Counties Manukau Health (CMH), Pacific people are significantly less likely to engage in Cancer treatment than non-Pacific people. Barriers to engagement include difficulties in understanding and conflicting beliefs. Using a narrative approach, an online patient stories video tool was developed that aimed to address barriers to Pacific people engaging in treatment. The influence and power of stories to connect experiences and convey genuineness is well researched.

**Methodology or Methods:** A needs assessment confirmed the complex health needs of the Pacific Community. The indigenous Fonofale model, Narrative approach, New Zealand Health Strategy and CMH processes and policies, provided the foundation to the project plan of developing an online tool of patient stories. The video tool was accessible to the CMH workforce to support Pacific Cancer patients and their families. A project plan was used to outline the relevant tasks in developing and introducing the tool to the workforce for implementation and evaluation.

**Impact on practice or Results:** While evaluative data is still being collected, preliminary use has shown that patient stories have the capacity to increase engagement of this population and offer an effective way to connect medicine and the Pacific community. There were a number of learnings during the development and implementation of the tool which may provide insight into future work.

**Discussion or Conclusions:** Based on findings, patient stories appear to be a viable and powerful way to connect with populations less engaged in Cancer treatment. Patient stories can be used by other services to support equitable access to Pacific patients, and engage other vulnerable population groups with mainstream treatment.

## 15 | What is the out-of-pocket cost burden of cancer care? A literature review

*Beverley Essue, Natalie Fitzgerald, Nadine Dunk, Nicolas Iragorri, Claire de Oliveira*

*Canadian Partnership Against Cancer, Toronto, Canada*

**Background/rationale or Objectives/purpose:** Growing costs of cancer treatment pose a substantial economic burden on healthcare systems, patients and their families. There is disparate evidence on the out-of-pocket cost burden and this limits opportunities to mobilize efforts within the cancer control system to improve the supports available for patients. We aimed to review the literature on out-of-pocket costs associated with cancer in Canada, compare with estimates from other OECD countries, and better understand the methods used to measure the economic burden of cancer.

**Methodology or Methods:** A comprehensive literature review of studies published in the academic and grey literature from 2008 to 2018, searching the main electronic databases. This was supplemented with key-informant interviews. Results were analyzed using a narrative synthesis and quality appraisals were conducted.

**Impact on practice or Results:** We included 78 studies and conducted ten key-informant interviews. Breast cancer was most commonly studied. The average monthly out-of-pocket expenditure reported in Canadian studies was CDN\$380, with prescription med-

icines and transport representing the highest cost categories followed by aides and equipment. Most studies used patient surveys. Few studies measured costs using longitudinal data or measured out-of-pocket costs in proportion to income; yet these were identified by key informants as crucial for understanding the affordability and impact of out-of-pocket costs. Fewer studies investigated how patients coped with financial hardship or the long-term impact on household-level economics.

**Discussion or Conclusions:** We found evidence that cancer patients in Canada face high out-of-pocket costs. Our results support the need for national PharmaCare and, potentially, a re-definition of how essential care is classified under the Canada Health Act.

## 14 | How should we measure the psychosocial costs of cancer? A literature review

*Beverley Essue<sup>1</sup>, Fitzgerald Natalie<sup>1</sup>, Nadine Dunk<sup>1</sup>, Nicolas Iragorri<sup>1</sup>, Claire de Oliveira<sup>1,2</sup>*

*<sup>1</sup>Canadian Partnership Against Cancer, Toronto, Canada; <sup>2</sup>Centre for Mental Health and Addiction, Toronto, Canada*

**Background/rationale or Objectives/purpose:** Psychosocial costs are the intangible costs of the psychological and emotional burden associated with illnesses, such as cancer. It results from psychological distress and turmoil, pain and suffering and other negative experiences that are commonly associated with cancer. Few studies have quantified the psychosocial costs of cancer to patients. This study aimed to describe and critically analyze approaches used for measuring the psychosocial costs of cancer.

**Methodology or Methods:** A comprehensive literature review of primary studies and reviews published in the academic and grey literature from 2008 to 2018 in ten electronic databases. This was supplemented with key-informant interviews. Results were analyzed using a narrative synthesis and quality appraisals conducted.

**Impact on practice or Results:** Forty-four primary studies and 13 reviews were included. Most reviews (85%) were published within the last five years and included studies of various cancer sites (69%). Various dimensions of the psychosocial burden were described, including: health-related quality of life; clinical diagnoses, or social, emotional, financial, and relational wellbeing and functioning. Few studies provided a cost estimate. Informants identified a) heterogeneity in the experience and impact of cancer and; b) the lack of standardized tools as key challenges for costing the psychosocial burden of cancer.

**Discussion or Conclusions:** More methodological work is needed to better estimate the psychosocial burden of cancer. Consultation with experts, patients and families, will help estimate and validate the costs associated this burden. The development and validation of a tool to measure this burden will ensure consistency in measurement.

## E. CANCER CARE IN LOW RESOURCE SETTINGS

### 743 | Reflections of emotions among health care professionals in delivering end of life care in Tamil Nadu

*Veenavani Nallepalli<sup>1</sup>, Saranya Sunadarraju<sup>2</sup>, Krishna kumar Rathnam<sup>3</sup>, Karthikeyan Perumal<sup>4</sup>, Vigneshvaran K<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** On managing a life limiting illness like cancer it is not only the patients and their care takers who are distressed. It is also a team work of doctors, nurses and allied health professionals who meet the physical, psychological, social and spiritual and cultural needs of the patients and their family to provide best ever possible care at the end of life of cancer patients.

**AIM:** The aim of the present study is to bring out the true emotional reflections like challenges, contentment, stress, loss, exhaustion that has a negative effect on their individual well being. The need to conduct the study in Tamil Nadu is because concept like this have received much attention in high income countries little is known about addressing these issues in low & middle income countries. Hence this study intend to focus on emotional challenges and will suggest possible intervention to cope up with the situations.

**Methodology or Methods:** A Qualitative research method is adopted to examine the real experience in depth by using a special set of methods like indepth interviews and content analysis and the list of emergent themes were reported.

**SETTIGS/PARTICIPANTS:** A study involves study participants 30 cancer physician & surgeons 20 nurses and 10 psychologist and social workers working in cancer centers of Tamil Nadu. The samples were choose through convenience sampling technique.

**Impact on practice or Results:** Our finding of the study obtained through in depth interview can be summarized as follows. Distress due to sudden death, dying and suffering. Failure in treatment, mismatch in communication, difficulties failed in breaking bad news, attributed emotional challenges, burden, work over bad non availability of medical treatment and equipments. Patients inability in delayed decision making due to financial constraints, loss of hope, managing relationship with patients

**Discussion or Conclusions:** Distress due to sudden death, dying and suffering. Failure in treatment, mismatch in communication, difficulties failed in breaking bad news, attributed emotional challenges, burden, work over bad non availability of medical treatment and equipments. Patients inability in delayed decision making due to financial constraints, loss of hope, managing relationship with patients.

**Keywords:** Distress, Burden, Healthcare professionals, Specialist.

## 616 | Personality, hardiness, psychological wellbeing and caregiving satisfaction among cancer caregivers in Sub Saharan Africa: a systematic review

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**Background/rationale or Objectives/purpose:** The purpose of this review, was to organize, in a meaningful way, available research on the role of personality and hardiness on the psychological wellbeing and caregiving satisfaction of cancer caregivers.

**Methodology or Methods:** A search strategy was developed by an information specialist and four databases (PubMed, PsychINFO, EMBASE and Google Scholar) were identified and searched for relevant literature. 256 studies were retrieved. Studies that were published between 2000 and 2019 were included in the review. Seventeen studies that met our inclusion criteria after screening, were coded and data extracted using a data extraction form developed in Excel spread sheet 2007. Publication bias was assessed using a funnel plot. Selection bias was addressed by reporting (using the PRISMA flow chart), the criteria used in selection of studies. Furthermore, the overall quality of the review was assessed following the GRADE criteria.

**Impact on practice or Results:** Preliminary findings revealed that cancer caregivers experience stressful situations, which is a potential threat to their psychological and emotional wellbeing. A high prevalence of depression, anxiety and objective burden in cancer caregivers was found. These findings are compatible with those of previous studies of caregivers of cancer patients.

**Discussion or Conclusions:** Diagnosis of cancer in a relative or someone close may be a source of immense stress. In response to the plight

of their patients, cancer caregivers are at risk of becoming emotionally overwhelmed by heightened fear of death and death-related thoughts. Hence, the need for further research on personality and hardiness, on the psychological wellbeing and caregiving satisfaction of cancer caregivers in Sub Saharan Africa.

## 466 | Patient's Perception of Cancer Care and Mental Adjustment in Low Resource Settings

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**Background/rationale or Objectives/purpose:** The Indian Scenario in cancer care was found to have great disparity in the health care facilities, accessibility, availability, and affordability prominently between the urban and rural population. Considering this, the present study is an attempt to identify the patient's perception of cancer care and mental adjustment of the cancer patients in rural settings. The sample for the study were chosen from rural parts of Tamil Nadu and there was found to be a paucity of study in India conducted among these people. The sample comprised of illiterate, and people hailing from low socioeconomic status. The study aimed to identify the unique problems, psycho-social issues and mental adjustment of each patient in obtaining treatment for cancer.

**Methodology or Methods:** The present study is a mixed method research. The sample included 55 cancer patients who are in the curative stage and are under treatment for the same. A semi-structured interview schedule, Kuppaswamy SES scale and Mental Adjustment inventory was the measures used.

**Impact on practice or Results:** The results revealed that majority of the patients were ignorant about the disease and the treatments provided. Also, most of them had to travel a far distance to avail the treatment and were obtaining the treatment using the government health scheme and are not in a position to afford to avail the treatment.

**Discussion or Conclusions:** The study emphasizes the need for understanding the social aspects and cultural beliefs of the disease for providing better cancer care. Further, cancer control plans should include psycho-social and financial support for the patients in low resource settings.

## 97 | Neuro Cognitive deficit as a marker of Depression: relevance for its exploration in breast cancer patients

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**Background/rationale or Objectives/purpose:** Neurocognitive dysfunction (NCD) is a cardinal feature of patients with depression. Published studies from India on NCD among breast cancer patients have so far not included assessment of NCD. Western literature has revealed significant incidence of NCD in Breast cancer patients.

Most recent studies have shown that irrespective of chemobrain, breast cancer patients may encounter subtle cognitive dysfunction mediated by cancer related Post Traumatic Stress disorder. Tools to accurately assess NCD thus becomes mandatory to delineate depression and its causes in breast cancer patients.

The purpose of this study was to assess the neurocognitive dysfunctions in patients with depression.

**Methodology or Methods:** We studied NCD among 20 patients diagnosed with Clinical depression who attended the Psychiatry department outpatient unit and compared with 20 normal controls.

The battery of tests employed includes 8 neuropsychological tests, which measures 6 neuropsychological domains namely executive functions, memory, attention, word knowledge, motor performance and psychomotor performance.

The incidence of NCD using Digit span, Word Knowledge, Digit symbol (WAIS), Porteus Maze Test, Trial makingtest (Part A & B), Logical memory 1, Visual reproduction 1(WMS R) showed statistically significant higher incidence of NCD in depression ( $p$  value = 0.05).

**Impact on practice or Results:** Such studies may enable distinction between PTSD and chemobrain and the reversibility of NCD in properly conducted trials.

**Discussion or Conclusions:** The role of NCD among Breast cancer patients undergoing chemotherapy may help to sort out the PTSD from chemobrain and the reversibility of NCD.

Further studies are needed in Asian countries like India where the incidence of breast cancer is rapidly on rise.

## 86 | Spouses of women with breast cancer: Dyadic adjustment, social support and quality of life

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**Background/rationale or Objectives/purpose:** To evaluate the relationship among the perception of dyadic adjustment, social support and quality of life (QoL) of women with breast cancer (BC) and QoL of their spouses, according to the age of the dyads.

**Methodology or Methods:** 160 participants were enrolled: 80 women with BC and their spouses. The sample was divided by young dyads  $\leq 40$  years, and old dyads  $\geq 50$  years old. A cross-correlational study was conducted. The dyadic adjustment, social support of the couple, and QoL were evaluated in both members of the couple. Data analysis was made by non-parametric statistics.

**Impact on practice or Results:** When the older patients perceived high marital satisfaction and affection, their spouses increased physical and social activities ( $r=0.336$ ;  $p = 0.034$ ;  $r = 0.312$ ;  $p = 0.050$ , respectively). We found a negative correlation between the husband's physical pain and physical health and the patient's social and familiar relationships and daily activities ( $r = 0.467$ ,  $p = 0.002$ ;  $r = 0.409$ ,  $p = 0.009$ , respectively). In the younger dyads, the higher was the support and carress perceived by the patients, the lower was the pain felt by the spouses and higher their emotional health ( $r = 0.315$ ;  $p = 0.048$ ;  $r = 0.311$ ;  $p = 0.050$ , respectively). Physical health problems and pain diminished in the spouses, while sexual problems and pain diminished in the patients ( $r = 0.391$ ,  $p = 0.013$ ;  $r = 0.341$ ,  $p = 0.031$ , respectively).

**Discussion or Conclusions:** The study confirms that there is a relationship between the components of the couple (social support and dyadic adjustment) with the QoL of spouses. It shows that patients with BC could improve QoL if psychological interventions are administered dyadic and individually, especially when spouses.

## 77 | Differences in cognitive emotional regulation by sociodemographic factors in Mexican women with breast cancer

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**Background/rationale or Objectives/purpose:** To compare cognitive emotional regulation strategies (CERS) in patients with breast cancer (BC) by sociodemographic variables.

**Methodology or Methods:** Comparative, cross-sectional study, which enrolled patients in different phases of BC treatment: diagnosis (5.5%), active treatment (56.5%), follow-up after treatment (30.4%), palliative care (3.3%), and recurrence (4.3%). The Cognitive Emotional Regulation Questionnaire (CERQ) Mexican version was administered to 398 patients with BC. This instrument measures four adaptive and two maladaptive strategies. The patients' median age was 52; 39.7% were married, and 88.4% catholic.

**Impact on practice or Results:** Positive refocusing (mean = 81.16%) was the most used CERS, and the least used style was self-blame (mean = 42.29%). Patients in extremes of the level of education's distribution ( $p$  e., illiterate, elementary school or post-grade) showed significantly higher levels of self-blame, in contrast to patients who were in the middle, such as secondary school, high school, and bachelor degree (Kruskal-Wallis = 13.62,  $p = 0.02$ ). Catholic patients and patients without religion reported higher level of acceptance in comparison to Christian and Jehovah's witness patients (Kruskal-Wallis = 18.55,  $p < 0.01$ ). Comparing by mean age ( $< 52$  and  $> 53$  years old), younger women had higher level of rumination ( $x = 57.46$  vs  $x = 51.56$ ;  $t = 2.73$ ;  $p < 0.01$ ) than older patients. There were no differences among patients by marital status, residence area or home income.

**Discussion or Conclusions:** CERS in Mexican patients with BC could be different depending on level of education, religion and age. Clinical implications: Clinicians and researchers should design and implement interventions programs based on the relation between socio-demographic factors and cognitive emotional regulation and its impact on emotional health outcomes.

## 45 | Effect of Psycho social training workshop on oncology clinicians psychosocial care delivery self efficacy and perceived barrier in Nigeria

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**Background/rationale or Objectives/purpose:** Psycho-social care is an important part of a multidisciplinary approach to cancer management to mitigate the experience of distress reported among those affected by cancer. Few specialists are available in Nigeria to assess psychosocial distress in cancer patients.

To build capacity in the psychosocial care of cancer patients through training oncology staff across government hospitals in Nigeria.

To assess the effect of training on the psychosocial care delivery self-efficacy and perceived barrier among oncology clinicians in Nigeria

**Methodology or Methods:** A total of 33 oncology clinicians from 17 institutions across 13 states in Nigeria participated in the 3 days psychosocial oncology training workshop following a process of call to participate sent to different hospitals in Nigeria and screening of eligible candidates. Participants completed both pre and post workshop tests on self-efficacy and perceived barrier in psychosocial service delivery to oncology patients.

**Impact on practice or Results:** A significant improvement was observed in their psychosocial care delivery self-efficacy ( $t = -6.318$ ;  $p < 0.05$ ) and significant reduction was observed in their perceived barrier ( $t = 3.280$ ;  $p < 0.05$ ) to providing psychosocial care to cancer patients at the end of the workshop. At three months follow up, the significant improvement in self-efficacy was maintained ( $t = -5.327$ ;  $p < 0.05$ ) while the significant reduction in perceived barriers ( $t = .584$ ;  $p > 0.05$ ) was lost.

**Discussion or Conclusions:** It was concluded that psychosocial training workshop was effective in improving the psychosocial care delivery self-efficacy and reducing perceived barrier among oncology clinicians in Nigeria. However it is recommended that such training should be ongoing to ensure the maintenance of its effect.

## F. COMPLEMENTARY THERAPIES AND INTEGRATIVE ONCOLOGY

### 766 | Reintegration Following Non-CNS Cancer – Can we Apply Methods from Clinical Neuropsychology?

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**Background/rationale or Objectives/purpose:** The literature on can-



cer-related cognitive impairment (CRCI) suggests that community-based neuropsychological rehabilitation tools can be useful in reintegrating survivors of non-CNS cancer. The **Sulam (“Ladder”) Program** was developed to offer non-CNS cancer survivors neuropsychological treatment with a vocational focus. The innovative program integrates different content areas, including treatment of cognitive deficits, vocational rehabilitation for individuals experiencing cognitive and emotional changes, and holistic psychosocial intervention.

**Methodology or Methods:** The program is grounded in intervention for acquired brain injury and adapted to address the specific needs of cancer survivors in three primary domains: cognitive, emotional, and vocational. It supports participants in returning to work, in accordance with their post-cancer abilities. In six months, it includes a wide range of interventions, among them: individual and group psychotherapy, CRCI-adapted groups, yoga, sexuality and nutrition groups, job/academic consultation and placement.

**Impact on practice or Results:** Results of our pilot group showed that all participants, who had lost jobs prior to beginning the program, initially had minor but significant deficits in attention, executive functions, and memory, and experienced changes in functioning, mood, and behavior. Upon program completion, there were improvements in these measures, alongside high rates of reintegration into employment or academic programs.

**Discussion or Conclusions:** Beyond vocational success, preliminary results show that most participants experienced improvements in emotional and cognitive functioning, supporting the need for and potential benefit of post-cancer neuropsychological rehabilitation day programs with a vocational focus. Adherence rates and initial observational data are encouraging and suggest value in the group setting that goes beyond individual therapy.

## 725 | Neuroimmunoendocrine trajectories and the response to sleep, stress, and fatigue in breast cancer survivors submitted to a Swedish massage intervention: preliminary results

*Emiliana Bomfim<sup>1</sup>, Anne Leis<sup>1</sup>, Franco Vizeacoumar<sup>1</sup>, Robert Skomro<sup>1</sup>, John Gjevre<sup>1</sup>, June Lim<sup>1</sup>, Sunil Yadav<sup>2</sup>, Kalyani Premkumar<sup>1</sup>*  
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**Background/rationale or Objectives/purpose:** The objective of this study was to investigate the effects of a Swedish massage protocol on quality of life (QoL), sleep, stress, fatigue, and biomarkers in a population of breast cancer survivors.

**Methodology or Methods:** Fifteen participants underwent 1 hour/week of a novel Swedish massage protocol for 8 weeks. Data was collected in three main phases: (i) baseline (ii) during an 8-week intervention period and (iii) endpoint. Symptoms were assessed through validated questionnaires. Sleep was measured with a wrist-worn device. Saliva was collected to quantify biomarkers levels. Some physiological parameters such as blood pressure, SpO2 level, and pulse were measured. (IRB approval protocol #16-112).

**Impact on practice or Results:** Mean age of participants was 55 years old. There was a significant difference between baseline fatigue ( $M = 23.5$ ,  $SD = 9.6$ ) to endpoint ( $M = 34.5$ ,  $SD = 9.1$ ). Significant improvement ( $t(5) = 3.369$ ,  $p = 0.020$ ) was also observed in stress from baseline ( $M = 24.1$ ,  $SD = 5.7$ ) to endpoint ( $M = 20.3$ ,  $SD = 8.1$ ). There was a statistically significant improvement in blood pressure from  $107.4 \pm 8.5$  mmHg to  $99.8 \pm 3.5$  mmHg ( $p = 0.047$ ); an improvement of  $3.50 \pm 1.16$  mmHg. Sleep efficiency pre and post-intervention also showed improvement.

**Discussion or Conclusions:** Partial results of our 8-week Swedish massage program showed significant benefits for improvement of TRS.

## 721 | How does complementary and alternative medicine can improve and prevent fatigue, sleep and psychological

## stress in breast cancer survivors?

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**Background/rationale or Objectives/purpose:** Although Complementary and Alternative Medicine (CAM) has been shown to provide positive results in managing long-term treatment-related effects (TRE), the studies conducted so far present a considerable number of gaps.

**Methodology or Methods:** This is a short-communication based on comprehensive evidence found in the literature.

**Impact on practice or Results:** Although there are some clear limitations regarding the body of research reviewed in this study, CAM is a promising group of adjuvant treatments that may assist breast cancer survivors in managing TRE. Some of these limitations and future directions are (1) Specificity: additional research is needed to unveil which type of CAM is most effective for which specific purpose so that tailored recommendations can be made to target specific interests of the patients; (2) Dosage, frequency, and efficiency: scientific evidence is needed to uncover and support CAM efficacy and efficiency. In other words, studies should increase the understanding of to whom and in what context each CAM work, when these practices should be used and for how long, and (3) Biological effects: although some studies already started to investigate the biological effects of CAM in breast cancer survivors, this still remains a largely unanswered question.

**Discussion or Conclusions:** The current limitations in the literature hamper the evidence-based decision-making process by health professionals and patients. On the other hand, it opens a wide possibility for scientific exploration by the scientific community.

## 719 | Effect of clown doctors on psychological stress and fatigue levels in pediatric cancer inpatients undergoing chemotherapy

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**Background/rationale or Objectives/purpose:** Clown doctors have been shown to enhance emotional and behavioral processes but few studies have comprehensively examined the effectiveness of this practice using biomarkers. The objective of this study was to assess the effect of clown doctors on psychological stress and fatigue levels in pediatric cancer inpatients undergoing chemotherapy.

**Methodology or Methods:** Sixteen patients who met all criteria from a pediatric cancer inpatient unit in a Brazilian hospital participated in this quasi-experimental study. Saliva samples were collected throughout four timepoints (+1 h, +4 h, +9 h, and +13 h post-awakening) pre and post-intervention. Salivary cortisol and  $\alpha$ -amylase levels were determined using high sensitivity enzyme-linked immunosorbent assay kits. Stress and fatigue were measured by the Child Stress Scale-ESIÖ and the PedsQL® Multidimensional Fatigue Scale respectively. Correlation between stress, fatigue and biomarker levels were investigated using non-parametric statistics.

**Impact on practice or Results:** Psychological stress and fatigue levels improved after the clown intervention at the collection time point +4 h ( $p = 0.003$  and  $p = 0.04$ , respectively). Salivary cortisol showed a significant decrease following clown intervention at the collection time points +1 h, +9 h, and +13 h ( $p$

**Discussion or Conclusions:** These findings provide preliminary evidence that clown intervention merits further study as a way to reduce

stress and fatigue in pediatric cancer inpatients, and that self-report and biomarker measures are feasible to collect in this patient group.

### 707 | Pilot Randomized Controlled Trial of a Dyadic Yoga Program for Head and Neck Cancer Patients Undergoing Chemoradiation and their Family Caregivers

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**Background/rationale or Objectives/purpose:** Chemoradiation (CT) to treat head and neck cancer (HNC) may result in debilitating symptoms and functional problems, and patients are at risk of preventable emergency department (ED) visits and feeding tube (FT) placements. Yoga therapy delivered concurrently to CRT may buffer against treatment-related sequelae. The purpose of this pilot RCT was to establish feasibility and preliminary efficacy of a yoga intervention. Because family caregivers report low caregiving efficacy and high levels of distress, we included them in this trial as active study participants.

**Methodology or Methods:** HNC patients initiating CRT and their caregivers were randomized to a 15-session yoga intervention or a waitlist control (WLC) group. Prior to CRT and randomization, both groups completed standard self-report measures. Patients' health utilization was documented over the course of CRT. Dyads were reassessed at the end of CRT.

**Impact on practice or Results:** We consented 40 dyads and randomized 37 of which 33 completed follow-up assessment. Patients (mean age: 60.3 years, 69% male) and caregivers (mean age: 58.7 years, 76% female, 78% spouses) completed a mean of 13.40 sessions (range 8-15). Relative to the WLC group, patients reported clinically significantly less oral problems ( $d = 1.13$ ), distress ( $d = 1.19$ ), constipation ( $d = .90$ ), fatigue ( $d = .72$ ), and drowsiness ( $d = .75$ ) and were less likely to require a FT ( $P < .05$ ) and visit the ED ( $P < .05$ ). Both patients and caregivers in the yoga group reported clinically significant improvements in quality of life (patients:  $d = .41$ ; caregivers:  $d = .72$ ) relative to the WLC.

**Discussion or Conclusions:** Yoga therapy appears to be a feasible, acceptable, and possibly efficacious behavioral supportive care strategy for HNC patients undergoing CRT.

### 704 | Mandala and Oncological patients

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**Background/rationale or Objectives/purpose:** The new awareness of the health system is to welcome the patient in a safe context. The mandala project in an oncology department is inspired by this principle.

The goal was to make available to patients a space in which care is taken of themselves while keeping away the thought of the disease and the consequences related to therapies.

To make available to hospitalized cancer patients, a service that they themselves manage, and if the project can count on all the requested volunteers, even a mandala coloring activity at the patient's bed.

**Methodology or Methods:** The traveling laboratory of mandala gave the opportunity to all the patients, to care themselves with the activity of coloring mandala. Even though they were seated with the infusions of chemotherapy attacked. And they were so distracted that they use the other hand to color, without thinking if they were able to use the other hand. They just had fun on coloring.

**Impact on practice or Results:** using the activity of mandala coloring, improve the humor of patients, the concentration and the memory gave and opportunity to have a social group experience and distract the patients from the disease.

**Discussion or Conclusions:** One of the reasons why the coloring of the Mandala is used in heterogeneous group laboratories is the desire to create a climate of collaboration and cooperation between people whose names and history are unknown. The focal point is the sharing of a moment, united by a common goal: finding an inner balance. This leads to integration and collaboration.

### 641 | GROUP VERSUS INDIVIDUAL ACUPUNCTURE FOR THE TREATMENT OF CANCER PAIN: An analysis of secondary outcomes such as fatigue, sleep disturbances, distress, and social support

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**Background/rationale or Objectives/purpose:** Examining the effectiveness of group versus individual acupuncture in cancer survivors for improving cancer-related symptoms of pain (primary outcome), fatigue, sleep disturbances and distress, and social support. This presentation will focus on all secondary outcomes.

**Methodology or Methods:** A randomized controlled non-inferiority trial comparing Individual acupuncture to Group acupuncture. Inclusion criteria included a minimum pain score  $>3$  on the 10-point Brief Pain Inventory and any type of cancer diagnosis. Patients were excluded if they had received acupuncture in the last 6 months, or were currently on or within one-month of active treatments. Participants across both treatment groups received acupuncture twice a week over 6 weeks (12 sessions). Measures of pain (primary outcome), fatigue, sleep disturbance, distress and social support (secondary outcomes) were assessed pre-post intervention. Changes in secondary outcomes were analyzed using mixed linear effect modeling and non-inferiority was inferred using a non-inferiority margin (0), difference of change between the two groups (D) and 95% CI.

**Impact on practice or Results:** A total of 75 participants were randomly assigned into group ( $n = 34$ ) or individual ( $n = 39$ ). Both groups improved across all out-comes, with social support only improving in group. The non-inferiority hypothesis was supported for psychological distress [0 -7.52 D 9.86 95%CI .85-18.86], sleep [0-1.65 D 2.60 95%CI .33-4.88], fatigue [0 8.54 D -15.57 95%CI 25.60-5.54] and social support [0.26 D -.15 95%CI -.42-.13].

**Discussion or Conclusions:** Non-inferiority of group acupuncture compared to individual acupuncture was met on all secondary outcomes. Group acupuncture exhibited greater improvement across sleep, distress and fatigue.

### 606 | Implementation of standardized Mindfulness-Based group Interventions in gynecological cancer care: A literature review

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**Background/rationale or Objectives/purpose:** The effectiveness of Mindfulness-Based group Interventions (MBI) on psychosocial outcomes of women affected by gynecological cancers is reported in several meta-analyses. Integrating these interventions in cancer care is recommended. Practically, data regarding feasibility, acceptability, appropriateness, adoption, costs, penetration and sustainability of such interventions in different clinical and cultural contexts are needed.

The aim of this review is to explore the literature regarding the factors that might impact on implementation of MBI in gynecological cancer care, as well as strategies facilitating their implementation.

**Methodology or Methods:** We performed bibliographic review on PubMed, CINAHL, PsycINFO, Embase, Cochrane Library and ProQuest databases. The following key words were used: tumor\*, tumour\*, carcino\*, neoplasm\*, sarcom\*, blastom\*, malignan\*, breast, genital, fallopian, vagina\*, vulv\*, ovar\*, uter\*, endometri\*, gynecologic\*, gynaecologic\*; mindfulness, meditation, mbsr, mbct, mbr. No filters were applied. We selected articles and dissertations published from October 2017 to November 2018.

**Impact on practice or Results:** MBI was feasible for women with breast cancer in several trials. However, implementation factors for MBI in more advanced stages or other gynecological cancers remain poorly described. Overall, MBI trials mainly focused on clinical outcomes, whereas implementation outcomes were insufficiently reported. Information on barriers and facilitators related to the integration, adoption and sustainability of these programs on providers', clinical staffs' and organizations' levels is strongly needed.

**Discussion or Conclusions:** There is an unmet need to explore the implementation processes, and the challenges of integrating MBI in different contexts. The most effective strategies to apply, in order to facilitate the successful integration to these interventions in cancer care settings has still to be explored.

#### 491 | The Perceptions of Medical Marijuana versus Opioids in the Management of Pain Management among Cancer Survivors

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**Background/rationale or Objectives/purpose:** The purpose of this study was to explore perceptions of opioid use and alternative therapies among cancer survivors who experience cancer and treatment-related pain.

**Methodology or Methods:** A purposive sample of 26 cancer survivor were interviewed. Open-ended questions centered on cancer survivors experience with cancer-related pain, the use of opioids and other alternative modalities, such as medical marijuana, to manage pain. Interviews were analyzed using applied thematic analysis techniques.

**Impact on practice or Results:** The majority of participants were women (96%) with a mean age of 50 and 64% identified themselves as either African American or Latino. Participants shared their cancer-related pain management concerns. Several experienced less than optimal pain management which impacted daily living. Many worried about the negative rhetoric surrounding opioids and feared that the use of such analgesics would lead to addiction. Overall participants preferred alternative pain management methods such as acupuncture, aromatherapy and medical marijuana over opioids. However, cost and insurance coverage issues resulted in poor access to alternative pain alleviating modalities. Of the alternative modalities discussed, medical marijuana was the most salient. Participants believed medical marijuana was a safer and more effective alternative method to assist in pain control. These beliefs and perceptions were often shaped by the media, family, and friends.

**Discussion or Conclusions:** In the face of the opioid epidemic, many cancer survivors view medical marijuana as a safer alternative than consuming prescription opioid medication. Health care providers need to have an open dialogue about conventional and unconventional strategies when working on a pain management plan with cancer survivors.

#### 360 | Rel@x program evaluation protocol: A hypnosis derived communication techniques training for pediatric oncology nurses

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**Background/rationale or Objectives/purpose:** A training program in hypnotic communication (HC) was developed for pediatric nurses in oncology. This full pilot study aims to evaluate: (1) nurses' relational and technical skills acquisition in a simulation protocol and (2) changes in patients' pain and distress.

**Methodology or Methods:** Rel@x is a manualized HC training program (4x2 hours): 2 sessions on relational aspects and 2 sessions on the chosen techniques ("preferred place" or "magic glove"). For objective 1, 32 pediatric oncology nurses and 32 nursing students will participate in the training and skills assessment. Video-recorded simulations with young actors will be conducted in pre-post-training and nurses' skills acquisition will be assessed using the Sainte-Justine Hypnotic Communication Assessment Scale (SJ-HCAS). For objective 2, HC implementation will be evaluated only among the pediatric oncology nurses. They will perform venipunctures with 10 consecutive independent patients aged 4+ years old. Pre- and post-training pain and distress will be assessed with visual analogue scales. Nurses will also be invited to self-assess their practice during each interaction.

**Impact on practice or Results:** The SJ-HCAS total, relation and technique scores will be compared by MANCOVA. A total score of 70% on the SJ-HCAS will be considered a good HC mastery. A repeated MANOVA analysis will be conducted on patients' pain and distress scores and associated with nurses' HC skills acquisition in multilevel modeling.

**Discussion or Conclusions:** This study will provide pediatric care centres with a manualized training program addressing patients' pain and distress. If significant pre-post changes are found, this program could be studied in efficacy trials.

#### 244 | Clinical observation of modified Xiaoyaosan Prescription in the treatment of depression during adjuvant chemotherapy after breast cancer operation

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**Background/rationale or Objectives/purpose:** The purpose of our study is to observe the clinical efficacy of Xiaoyaosan Prescription, a traditional Chinese Classical prescription (JingFang), in the treatment of depression patients during adjuvant chemotherapy after breast cancer operation.

**Methodology or Methods:** Using prospective randomized controlled study, patients are divided into control group(Lifemin tablet) and traditional Chinese medicine group(Xiaoyaosan Prescription),within 8 weeks. The main observation are SDS, HAMD, TCM syndromes scores.

**Impact on practice or Results:** By comparing two groups' SDS score, HAMD score, TCM syndrome score, after t test analysis,which indicate that TCM group value is lower than control group, so we can conclude that TCM group's condition treatment is better than the control group.

**Discussion or Conclusions:** Xiaoyaosan Prescription can effectively relieve depression state in patients during adjuvant chemotherapy after breast cancer operation, which indicates a high clinical value of traditional Chinese medicine in treating patients with depression.



## 120 | The Psychological Benefits of the use of Integrative Oncology techniques in terminal cancer patients

*Priscila Beira*

*Private Practice, Amparo, Brazil*

**Background/rationale or Objectives/purpose:**

**Background:**

Evidence-based Integrative Medicine uses all the treatments resources to care for cancer patients, their family and health team seeking well-being and global perspective of care. Addressing the psychological, mental and social aspects during the process of seeking a broadened sense of cure. Through this perspective, cancer patients must have their well-being and autonomy as a priority, even when in terminal cases. This case report a terminal patient diagnosed with Ependymoma from one year and five months up ten years old, when he passed away.

**Methodology or Methods:** Methodology:

In the last three months of life, the patient was treated with Integrative Oncology techniques such as Music therapy and Meditation used for well-being of the patient and his relatives. Although speech, mobility, respiratory and feeding abilities were impaired, the patient remained conscious.

**Impact on practice or Results:** Impact on practice:

These practices influenced the last three months of the patient's life with less agitation, fewer clinical changes, less medication, reducing anxiety and promoting a peaceful remembrance of the past, culminating in what is described as a 'good death'. It also contributed to calm and acceptance of death by parents, minimizing the difficult and complex process of terminality and affecting positively the grief.

**Discussion or Conclusions:** Discussion:

This case report highlights the positive impact of Integrative Oncology to take care for very ill patient dealing with terminality and it was possible to minimize the financial, social and psychological burden of the patients and their relatives. It is clear that this approach should be used for patients in terminal cancer care.

## G. COMMUNITY BASED ORGANIZATIONS

### 544 | Silent no more: A community living with lung cancer finds its voice

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**Background/rationale or Objectives/purpose:** Canada's lung cancer mortality rate among women in 2012 was 47.0 per 100,000 compared with 26.5 per 100,000 among peer countries. In 2016 a regional group was mobilized by Lung Cancer Canada to brain storm on how women with lung cancer could be better served, as well as raise awareness about the disease.

**Methodology or Methods:** Rather than a traditional needs assessment, we offered a 6-week psycho-educational group with pre and post testing to assess the feasibility of running a lung cancer support group. We also sought insight into what women with lung cancer were looking for and to build a reproducible model of intervention. The outcomes demonstrated that several quality of life domains improved. All participants agreed the group helped them live and cope better with cancer.

**Impact on practice or Results:** A monthly meeting has followed this group and is now open to both genders. The need for advocacy and awareness was an imperative for participants. The sense of outrage that death rates are so high, that research dollars are limited and that until recently few new treatments were offered. Participants created on line groups, personal blogs, met with MP's, wrote articles and presented at conferences. Participants have started regular information sessions at the cancer centre and coordinated a regional 'lung cancer patient summit'.

**Discussion or Conclusions:** The broad activities initiated by this group is leading to similar activities across the country. A grass root

movement is ensuring that lung cancer patients are heard, understood and treatment options offer long term outcomes.

### 259 | A Community Guide to Cancer Nutrition

*Amy Symington*

*George Brown College, TORONTO, Canada; Gilda's Club Greater Toronto, TORONTO, Canada*

**Background/rationale or Objectives/purpose:** Gilda's Club Greater Toronto (GCGT) is where people whose lives have been touched by cancer come to obtain practical support. Nearly 50% of Canadians will be diagnosed with cancer in their lifetime and 25% are expected to die from cancer (Canadian Cancer Statistics Advisory Committee, 2018). Consequently, there is a demand to meet the needs of those dealing with the social, emotional and nutritional repercussions of living with cancer. At GCGT Chef Amy Symington, MSc runs nutrition programming that meet these needs, including a supper program where she and her volunteers, often culinary nutrition students from George Brown College (GBC) provide health-promoting meals to the members. allowing members to come together in a supportive and empowering community setting.

**Methodology or Methods:** There is a need in the cancer care realm for a well-researched nutrition guide that can be used by cancer organizations to run successful nutrition programming. Chef Symington, GCGT's Culinary Nutrition Program Coordinator and also a nutrition professor, chef and researcher at GBC, after obtaining funding from SSHRC, researched and produced a comprehensive, accessible guide for cancer nutrition.

In addition to the guide, Symington has also collected quantitative and qualitative data from 40 GCGT members regarding the impact of their nutrition programming. The data will now be analyzed and the findings used to write a report.

**Impact on practice or Results:** The final product is a research focused, evidence-based guide containing recipes and practical information on how to run cancer focused nutrition programming.

**Discussion or Conclusions:** This guide and research will provide insight related the benefits of cancer nutrition programming.

## H. CULTURE AND SEX/GENDER

### 698 | Emotional instability, sexual abuse, and infidelity as correlates of marital conflict among cancer patients in Ibadan

*Emmanuel Terzungwe Agune*

*University of Ibadan, Ibadan, Nigeria*

**Background/rationale or Objectives/purpose:** Marital conflict in research has been linked with several variables which results in divorce or most times separation. This study therefore, investigated on emotional instability, sexual abuse, and infidelity as correlates of marital conflict among cancer patients in Ibadan

**Methodology or Methods:** The study utilized cross sectional survey design with the use of questionnaire for data collection which involved emotional instability scale, sexual abuse scale, infidelity scale and marital conflict scale.

**Impact on practice or Results:** The results indicated that there was a significant relationship among emotional instability, sexual abuse, infidelity and marital conflict. Result also shows that there was a significant joint influence of emotional instability, sexual abuse and infidelity on marital conflict among cancer patients.

**Discussion or Conclusions:** Emotional instability, sexual abuse and infidelity should be handled with caution as they are capable of destroying a home

### 541 | The experience of cervical cancer considering gender perspective: gender as another source of social inequity in health in Argentina

*María Magdalena Navarro*

*Public Maternal and Child Hospital- Hospital Público Materno Infantil, Salta, Argentina*

**Background/rationale or Objectives/purpose:** The purpose of this research was to know and describe the meanings attributed to the experience of suffering cervical cancer of women receiving oncological treatment in the Public Maternal and Child Hospital in Salta, Argentina, highlighting a gender perspective.

**Methodology or Methods:** Theoretical and qualitative methodological tools developed by Psychology and Anthropology were taken, recovering the analysis of Illness Narratives to address the suffering of women. Semi-structured interviews were conducted with fifteen adult women who received chemotherapy. A theoretical sampling of intentional type was used. Design was exploratory- descriptive.

**Impact on practice or Results:** Women did not have an early diagnosis. The reasons why they did not have timely access to the health system were related to meanings of the illness experience that refer specifically to cultural constructions of gender. The validity of the social myth Woman = Mother was found and their health care is subordinated to it. Screening was not relevant, either due to misinformation, lack of awareness, modesty, fears, shame or sexual taboos. Their daily lives were marked by gender violence, poverty and social vulnerability. Another reason was related to structural weaknesses of the health system.

**Discussion or Conclusions:** In Argentina, cervical cancer is considered the oncological illness that most strongly shows the social inequalities in health, being the province of Salta one of the poorest and with the highest mortality for this cause. This research reflects gender as an important source of social inequity in health. This is a complex problem that deserves to be deepened and transmitted in order to improve the prevention and assistance of cervical cancer.

## 171 | Body image among oncology patients

*Karolina Juszczyk, Paweł Izdebski*

*Kazimierz Wielki University, Bydgoszcz, Poland*

**Background/rationale or Objectives/purpose:** The aim of the presented study is to analyze the problem of body image among cancer patients, with the particular focus on the following varieties: type of cancer, applied medical procedures, age and sex.

**Methodology or Methods:** The study consisted of 197 patients with diagnosed cancer aged 27–83 ( $M = 57.53$ ,  $SD = 11.76$ ). Patients answered to the Body Image Test – Cancer (Test Obrazu Ciała – Choroba Nowotworowa) (Izdebski's & Kawiecka-Dziembowska). This a quick tool which measures perception of one's body in cancer patients.

**Impact on practice or Results:** Results Based on the carried out analyses it was stated that females had more negative perception of own body than males ( $t = 3.07$ ,  $p = 0.002$ ). Moreover, it was observed that middle-aged patients and patients in late adulthood presented worse body image. It was not stated that varieties such as applied medical procedures or type of cancer diversified patients.

**Discussion or Conclusions:** Based on the carried out analyses it is possible to claim that females aged 46–65 are particularly sensitive to fluctuations happening in the body due to the illness. Further study on body image in this group is necessary, because the body image is a significant part of building the identity.

## 41 | Male's quality of life in head and neck cancer outpatients: The role of body image

*PeiChiung Tu<sup>1</sup>, MuTe Wang<sup>2</sup>*

*<sup>1</sup>Chung Yuan Christian University, Tao yuan, Taiwan; <sup>2</sup>Fo Guang University, Yilan, Taiwan*

**Background/rationale or Objectives/purpose:** After a cancer diagnosis, surgery and adjuvant therapy may lead to significant changes in appearance, especially for the patients with head and neck cancer. Although a few studies have found that the change in body image may worsen the adaption to cancer, the relationship between them has still unresolved, especially for the male outpatients. This study adopted cognitive-behavioral perspectives of

body image as a framework and aimed to examine the effect of two types of body image attitudes, defined as body image evaluation and body image investment, on the health function among male head and neck cancer outpatients during the six months to one year post-diagnosis period.

**Methodology or Methods:** This study conducted a cross section design. A total of 136 male outpatients diagnosed with head and neck cancer were recruited. Four ratings scales were used to assess appearance changes caused by cancer, patients' attitudes towards body image, and mental health, including the Head and Neck Cancer Appearance Change Scale, Body Image Scale, Appearance Schema Inventory-Revised, and Functional Assessment of Cancer Therapy-Head and Neck Scale.

**Impact on practice or Results:** Regression analysis showed that age, educational status, body appearance changes, body image evaluation, and self-evaluative salience part of body image investment negatively predicted health function, especially in the physical health.

**Discussion or Conclusions:** This study suggested that less evaluating oneself by body appearance and keeping better satisfactions of one's appearance changes caused by cancer played an important role in improving adaptation to cancer among male head and neck cancer outpatients. These results can be further investigated using a longitudinal design.

## 25 | Distress and quality of life: An exploratory study of Chinese-speaking cancer patients and family caregivers in Canada

*Joyce Lee<sup>1,2</sup>, Richard Sawatzky<sup>3,4</sup>, Carolyn Gotay<sup>2</sup>, Arminée Kazanjian<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** This study explores the relationships of patient distress, family caregiver distress and patient quality of life (QOL) in a Chinese-speaking cancer population, using a comparison group of Anglophone patients and family caregivers in British Columbia, Canada.

**Methodology or Methods:** Quantitative regression analysis of survey data was conducted to examine the direct and indirect effects of patient and family caregiver distress on patient QOL based on data from 29 Chinese-speaking and 28 Anglophone dyads. Semi-structured interviews were conducted with a purposive sample of ten Chinese-speaking patients and six family caregivers to further clarify the interrelationships among patient distress, family caregiver distress and patient QOL.

**Impact on practice or Results:** Patient distress was a significant predictor of patient QOL ( $b = -.79$ ). The effects of patient age on patient emotional well-being were mediated by patient distress, such that lower distress in older patients explained better emotional functioning. A key theme from the qualitative data analysis was the emotional regulation of patient and family caregiver, where both sought to regulate their emotions to protect each other from further cancer-related distress.

**Discussion or Conclusions:** These results highlight the importance of understanding the patients' and family members' cultural and social context, in patient- and family-centred care. Where age may affect distress and a patient's QOL, it is recommended to tailor interventions to address the specific concerns that align with patients and family members in younger and older age groups. Further, the patient-family caregiver dyad needs to be considered as the unit of care.

## I. EHEALTH RESEARCH & INTERVENTIONS

### 751 | E-cigarettes as a Smoking Cessation aid in Cancer Patients: Health Professionals knowledge, attitude and current practice

*Jo Brett<sup>1</sup>, Fiona Matley<sup>1</sup>, Emma Davies<sup>1</sup>, David Foxcroft<sup>1</sup>,*

*Eila Watson<sup>1</sup>, Paul Aveyard<sup>2</sup>, Brian Nicholson<sup>2</sup>, Lesley Sinclair<sup>3</sup>, Shiroma De Silva Minor<sup>4</sup>, Sarah Jakes<sup>5</sup>*

<sup>1</sup>Oxford Brookes University, Oxford, United Kingdom; <sup>2</sup>University of Oxford, Oxford, United Kingdom; <sup>3</sup>University of Stirling, Stirling, United Kingdom; <sup>4</sup>Oxford University Hospitals NHS Trust, Oxford, United Kingdom; <sup>5</sup>New Nicotine Alliance, London, United Kingdom  
**Background/rationale or Objectives/purpose:** E-cigarettes have become increasingly popular as a smoking cessation aid and a positive public health stance in the UK supports use of e-cigarettes in reducing the health-related harms of tobacco, including in cancer patients who smoke. However, their use remains controversial, and this study explores health professionals' knowledge, attitudes and current practice on e-cigarettes as a smoking cessation aid in cancer patients

**Methodology or Methods:** This study was a national online survey to investigate UK health professionals' knowledge, attitudes, and current practice of e-cigarettes as a smoking cessation intervention in cancer patients. 506 health professionals (HPs) completed the survey including GPs (n = 103), oncologists (n = 102), cancer surgeons (n = 100), practice nurses (n = 102), cancer nurse specialists (n = 99). The sample was stratified by NHS regions

**Impact on practice or Results:** Twenty nine percent of HPs would not recommend e-cigarettes to cancer patients who smoke, while 38% believed colleagues would feel uncomfortable about recommending e-cigarettes to cancer patients. The majority of respondents reported that e-cigarettes were either banned or only allowed in designated tobacco smoking areas in their organisation. Over half of HPs believed their knowledge was not sufficient to recommend e-cigarettes to cancer patients, and 25% did not know whether e-cigarettes were less harmful than smoking tobacco cigarettes

**Discussion or Conclusions:** While UK health policy support e-cigarettes as a smoking cessation aid, this has not yet been adopted by local health organisations, causing barriers to and uncertainty around promoting use of e-cigarettes in cancer patients that smoke. Training of health professionals and local adoption of e-cigarette advice are needed

## 700 | Improving Adherence to Self-management Behaviors in Adolescent and Young Adult Cancer Stem Cell Transplant Survivors Using a Gamified On-line Intervention

*Susan Peterson<sup>1</sup>, Jeffery McLaughlin<sup>2</sup>, Demetrios Petropoulos<sup>1</sup>, Maria Camero<sup>1</sup>, Martha Askins<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Adolescent and young adult (AYA) cancer patients undergoing hematopoietic stem cell transplantation (SCT) face a life-threatening, intensive treatment requiring lengthy hospitalization. SCT survivors follow a rigorous self-management regimen during recovery, including adhering to multiple medications, and maintaining adequate hydration and physical activity, to avoid serious consequences. Adherence is challenging for AYA survivors, whose developing autonomy and enjoyment of peers is juxtaposed with constraints of cancer treatment. We developed an online interactive intervention for AYA SCT survivors incorporating game mechanics to promote adherence to post-transplant self-management behaviors. Intervention development was guided by a conceptual framework wherein adherence to positive self-management behaviors is promoted by addressing psychological, physical and cognitive barriers to motivation and by enhancing resiliency, perceived social support and intrinsic/extrinsic reinforcement. We evaluated the intervention's technical merit, feasibility and acceptability.

**Methodology or Methods:** AYA allogeneic SCT survivors age 15–28 were invited to access the intervention site for 3 weeks; subsequently, they completed an evaluation comprising the 52-item Technology Acceptance Measure (TAM), adapted for this study, and a semi-structured interview.

**Impact on practice or Results:** Mean age of the sample (n = 27) was 24.1 years (SD = 2.2, range 20–28), 63% were female, and 19% and

30% were Black and Hispanic race/ethnicity, respectively. Mean TAM score was 6.1 (range 1–7); ratings indicated high perceived enjoyment, and high behavioral intention to use the system. Participants also desired information on long-term coping after SCT recovery.

**Discussion or Conclusions:** Results showed high usability, feasibility and satisfaction ratings with the intervention, and suggested its potential as a platform to also improve quality of life post-SCT recovery.

## 699 | Internet use in an old age sample to improve awareness towards cancer risk

*Tania Estapé<sup>1</sup>, Jordi Estapé<sup>1</sup>, Irida V. Carrión<sup>2</sup>, Raquel Vila<sup>1</sup>*  
<sup>1</sup>Fefoc Fundació, Barcelona, Spain; <sup>2</sup>University of South Florida, Florida, USA

**Background/rationale or Objectives/purpose:** Old people is misinformed and passive towards cancer. Objective:to improve knowledges and attitudes towards cancer in an old age sample via internet

**Methodology or Methods:** We use a tool in our old people and cancer website containing information on prevention,early detection and eliminat false believes towards cancer.It includes animated drawings.

**Impact on practice or Results:** Results:6 months after a questionnaire on general knowledge towards cancer and a later talk on cancer prevention,early detection and psychosocial aspects related to cancer,144 old people were given the password to enter in internet tool to have a recall on hot points.Previously they answer some questions on internet:58% use it.Among these 58 % use to search for information,40 % say is not easy for them to find what they want.30 % needs help to navigate.Among those who never use internet main reasons where they find difficult or have no interest.Related to our internet tool,22% have used it.67% found that it was easy to enter.18% say they needed help to enter.81% considered it a useful tool.Of those who did not use it 46% say they did not remember to use it and 33% say that it is because they usually do not useinternet.One said he had not found anyone to help him.In spite of low usage,we found that people who have used it improved their knowledge in more awareness of cancer risk,chances of prevention an early detection and low negative attitudes towards cancer in general (statistically significant).

**Discussion or Conclusions:** This is a good way to follow using an e-health tool with old people towards cancer.

## 677 | i-Restoring Body Image After Breast Cancer (i-ReBIC): Results from a pilot trial evaluating an online group therapy

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**Background/rationale or Objectives/purpose:** Up to 77% of women treated for breast cancer report body image distress, with longitudinal research indicating persistent disturbance five years following treatment. A novel face-to-face group therapy, Restoring Body Image after Cancer (ReBIC) was tested in a randomized trial and demonstrated significant impacts on body image distress and quality of life (QOL). To provide greater access to ReBIC, the intervention is being translated to an online version (iReBIC), and a pilot trial is being conducted to examine its feasibility, acceptability and preliminary effects.

**Methodology or Methods:** The translated iReBIC is now being delivered via the well-established Cancer Chat Canada online platform at de Souza Institute, to reach a sample size of six groups totalling 36 participants. Data collection will include participation rate, drop out rate, descriptive statistics and paired t-tests on the primary outcome of body image distress and secondary outcomes of psychosexual functioning and QOL.

**Impact on practice or Results:** A total of 22 women have participated in the groups, with the remaining two groups to be completed by



June 2019. Preliminary effects suggest feasibility with an online format. Results of the pilot trial will be presented including the primary and secondary outcomes and qualitative data.

**Discussion or Conclusions:** Findings indicate that an in-person group therapy can be translated into an online format. Preliminary findings are consistent with improvements in body-image distress. If feasibility and acceptability are established, results will inform a larger randomized controlled trial. Online psychosocial care can improve access to groups across Canada designed to address persistent survivorship issues.

### 661 | An Internet-based Relational Intimacy and Sexual Enhancement (RISE) Intervention for Couples Experiencing Sexual Distress following Breast Cancer: Outcomes and Recommendations

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**Background/rationale or Objectives/purpose:** Despite the well-established evidence that many breast cancer survivors encounter some degree of difficulty regarding their sexuality, support for women and couples experiencing sexual distress as a result of breast cancer is lacking. Accordingly, breast cancer survivors have identified sexuality as a top unmet need that continues to be under-addressed by health care systems world-wide.

**Methodology or Methods:** The RISE intervention is an original, couples-based program that was developed to reduce sexual distress by focusing on domains previously identified as relevant to sexual rehabilitation in breast cancer (e.g., good communication, acceptance and flexibility, relational intimacy, sensate focusing, body image). Fourteen couples received six sessions of psychosexual counseling delivered via video-conferencing, and completed questionnaires concerning sexual functioning, marital quality, and psychological adjustment at baseline, post-treatment, and three-month follow-up, along with satisfaction surveys and post-treatment interviews. Dyadic analysis based on multilevel modeling was used to evaluate the intervention's effectiveness.

**Impact on practice or Results:** Findings suggest that the RISE intervention was effective at alleviating sexual distress and improving sexual relationships, with the vast majority of couples reporting that they were satisfied with the program. The use of eTherapy was also widely accepted by participants, who highlighted several advantages of this modality.

**Discussion or Conclusions:** The current study fills a notable gap in the support available to couples experiencing sexual difficulties following breast cancer. Participants' feedback suggests that eTherapy for sexual distress should be considered when not otherwise readily available and/or easily accessible. Recommendations for researchers and clinicians involved in the design, evaluation, and provision of online psychosexual interventions are also discussed.

### 599 | Living Well after Breast Cancer: the effect of a weight loss intervention (versus usual care) on psychosocial outcomes in early-stage breast cancer survivors

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**Background/rationale or Objectives/purpose:** Few weight loss trials in breast cancer survivors have examined the benefits of on psychosocial outcomes. This trial evaluated a 12-month telephone and text message-delivered weight loss intervention (vs usual care) on weight change and psychosocial outcomes including quality of life (QoL) and fear of cancer recurrence (FCR).

**Methodology or Methods:** Women (18–75 years; BMI 25–45 kg/m<sup>2</sup>) diagnosed <2-years prior with stage I–III breast cancer were recruited and randomized to a weight loss (diet and physical activity) intervention (n = 79) or usual care (n = 80). The intervention group received 22 coaching telephone calls, with optional text messages, over 12-months. Data were collected at baseline, 12- (end-of-intervention; 82% retention) and 18-months (80% retention). QoL was measured using the PROMIS Global Health Scale; FCR measured using the Concerns About Recurrence Questionnaire (CARQ-4). Intervention effects, assessed by linear mixed models, accounted for repeated measures and baseline values.

**Impact on practice or Results:** Participants were (mean ± SD) 55 ± 9 years, 10.7 ± 5.0 months post-diagnosis and 54.4% Stage I cancer. Significant intervention effects (intervention minus usual care) were observed for weight at end-of-intervention (-4.5% [95%CI: -6.5, -2.5]), and 18-months (-3.1% [-5.3, -0.9]) and for Global Physical Health Score (T score; 2.66 [0.71, 4.6]) at end-of-intervention only. Significant within-group improvements in the intervention group were observed for Global Mental Health Score at end-of-intervention only. Both groups significantly improved FCR at end-of-intervention and 18-months.

**Discussion or Conclusions:** Weight loss had some benefit on psychosocial outcomes in breast cancer survivors. Further research in those experiencing poor psychosocial wellbeing (e.g. very high FCR) is warranted to inform practice.

### 565 | Development of novel online training programs to facilitate effective family-carer involvement in oncology: The eTRIO trial

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<sup>10</sup>Sydney Medical School, University of Sydney, Sydney, Australia

**Background/rationale or Objectives/purpose:** While family carer involvement is often considered an important aspect of cancer care, many carers report feeling disempowered and ill-equipped to support patients. Our group published the evidence-based 'TRIO Guidelines' to improve clinician's engagement with carers and management of challenging situations in the cancer setting. To facilitate implementation of these guidelines into clinical practice, we have developed two novel online education modules: for oncology clinicians (eTRIO) and for cancer patients and carers (eTRIO-pc).

**Methodology or Methods:** The eTRIO modules were based on extensive prior research by our group (systematic reviews, qualitative interviews, consultation audiotape analyses, and Delphi consensus guidelines). The draft module content and interactive activities were iteratively reviewed by an expert advisory group involving academic/clinical experts (n = 13) and consumers (n = 5).

**Impact on practice or Results:** Both programs utilise cutting-edge interactive web-technology to promote learners' engagement and uptake of key skills. The modules include 11 professionally produced short films (with embedded trigger activities) modelling effective behaviours in clinical scenarios. Experiential content is provided via video-messages from consumers

and clinicians. A national RCT is currently evaluating the effectiveness of the combined modules in improving: i) carer involvement in consultations, ii) stakeholders' self-efficacy in clinician-patient-family communication, iii) patient/carer psychosocial outcomes and iv) healthcare costs.

**Discussion or Conclusions:** The eTRIO programs have been rigorously developed to meet the needs of clinicians, patients, and carers in improving effective and useful carer involvement. The interventions aim to shift the status of informal carers from an underserved, vulnerable, and ill-equipped population to being confident, informed, and supported partners in cancer care.

### **564 | Facilitating a SEAMLESS transition to survivorship: Lessons from a clinical trial evaluating a Smartphone App-based MindfulnEss intervention for cancer SurvivorS**

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**Background/rationale or Objectives/purpose:** Smartphone app-based digital health interventions (DHIs) are an innovative way to deliver psychosocial cancer-care, especially during phases of heightened-stress. Additionally, DHIs can reach cancer patients unable to participate in face-to-face interventions due to compromised immunity, negative symptoms, scheduling conflicts and geography. In the SEAMLESS study, we developed a mobile app-based mindfulness intervention for cancer survivors post-treatment.

**Methodology or Methods:** The DHI was delivered through a smartphone app called Am, which had pre-recorded audio lectures and guided meditations in a sequence or journey. The SEAMLESS study is a randomized wait-list controlled trial, which evaluates Am's effectiveness for reducing stress (primary outcome), anxiety, depression, fatigue and fear of cancer recurrence in cancer survivors who have completed all treatments for 2 weeks or more. Outcomes were collected using the web-based software, REDCap at 1) baseline, 2) mid-point 3) immediately post-intervention, 4&5) 3 and 6 months follow-up post-baseline.

**Impact on practice or Results:** Mobile apps and similar DHIs hold enormous promise for improving health outcomes and healthcare delivery by improving accessibility, efficiency, personalization, and are scalable across populations and vast geographies. Another advantage of app-based interventions is their existing popularity and availability across demographics, although evidence regarding their efficacy is yet to be established. This study provides a model for the development and evaluation of mobile-app based psychosocial interventions across the cancer-care trajectory, especially during survivorship.

**Discussion or Conclusions:** This is the first Canadian trial to test the efficacy of an app-based mindfulness intervention for cancer survivors, which if helpful, could be made easily available for psychosocial care at cancer centres worldwide.

### **560 | Interventions and tools to improve carer involvement in consultations: A review**

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**Background/rationale or Objectives/purpose:** While family carers are often involved in medical consultations and decisions, some report feeling disempowered, overwhelmed, and unsure of their role. The aim of this

review was to ascertain what guidance currently exists for family carers on how to be effectively involved in their loved one's consultations, by reviewing the academic evidence-base as well as publicly available web-resources for carers.

**Methodology or Methods:** Empirical studies of carer-directed interventions were identified via Medline, Scopus, CINAHL, PsycINFO databases. Searches were also performed using lay search strings on Google, to identify websites directed at carers that provided information on being involved in consultations, communicating with health professionals, patient advocacy, or treatment decision-making.

**Impact on practice or Results:** Twelve eligible studies were found in academic databases, most targeting carers in the cancer setting. Interventions included question prompt lists, communication skills workshops and coaching, checklists and written guides. Positive carer outcomes of some interventions included increased self-efficacy, greater involvement in consultations and reduced distress. However, only two interventions were rigorously tested in RCTs. Google searches yielded 24 relevant carer-specific websites, including nine targeting carers in oncology. Websites provided advice on preparing for and participating in consultations.

**Discussion or Conclusions:** While some interventions and websites are available to guide family carers' involvement in consultations, few adequately address or model how carers can be involved in decision-making or navigate challenging situations (such as advocating for the patient's needs). Comprehensive evidence-based resources informing carers and modelling effective carer involvement are needed to address the paucity of guidance in this area.

### **517 | Psychological implications and coping strategies to breast cancer in the pre -post and follow up surgical treatment period**

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**Background/rationale or Objectives/purpose:** **Objectives:** The aim of present study was to evaluate psychological implications related to the diagnosis of breast cancer. Specifically, we want to observe how levels of anxiety, depression, stress and coping strategies can change during the three most stressful phases of the therapeutic period such as pre and post- surgery and follow-up.

**Methodology or Methods:** **Methods:** 120 women were recruited for this cross-sectional study before and after breast cancer surgery and at follow up. Each participants had filled self-report questionnaires assessing distress (Distress Thermometer Scale), anxiety and depression (Hospital Anxiety and Depression Scale, HADS) and adjustment to Cancer (MINI-MAC). Correlation, linear regression and conditional process analysis was used to explore relationships between predictor variable and psychological outcomes (anxiety, depression, distress, coping strategies).

**Impact on practice or Results:** **Results:** Significant correlations were found among the observed variables. High levels of distress and anxiety were observed in the pre-surgical period instead depression symptoms are more evidence in post-surgical period. The results highlighted that coping strategies were the strongest predictors of psychological symptoms. High levels of anxiety were identified more in patients who used hopeless and anxious preoccupation coping strategies whilst patients with a fighting spirit and a fatalistic had lower levels of anxiety and depression.

**Discussion or Conclusions:** **Conclusion and clinical implications:** Behavioral strategies that promote active modalities would be more effective and favor better therapeutic compliance compared to more passive characterized by feelings of helplessness and desperation. Identification of early and significant predictive factors of adaptation can provide an

opportunity to development targeted and effective programs to prevent psychological stress of oncological disease.

### 515 | PSYCHOLOGICAL FLEXIBILITY AS PREDICTOR IN PATIENTS' ADJUSTMENT TO CANCER: A SYSTEMATIC REVIEW

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**Background/rationale or Objectives/purpose:** **OBJECTIVE:** We reviewed studies that evaluated the relationship between psychological flexibility and psychological co-morbidity such as anxiety, depression and distress.

**Methodology or Methods:** **METHOD:** The Cochrane library, MEDLINE, EMBASE, CINAHL Plus (EBSCO), and PsycINFO, were searched using this MeSH terms "Acceptance and Commitment therapy" or "ACT" or "psychological flexibility", cancer, oncology, or distress, or "defusion, "depression." Articles retrieved were published between 2015 to October 2018. The search, data extraction, and quality assessment were performed by two of the authors. Based on the data extraction and quality assessment, the level of evidence was determined.

**Impact on practice or Results:** **RESULTS:** Out of 1240 articles, 10 eligible articles were included in this review. The selected studies pointed out to three main conclusion: (1) Psychological Flexibility is often invalidated by the cognitive and emotional repertoire that patients develop, especially when they use mechanisms of thought avoidance and control to manage and protect themselves from the emotional impact of the disease and related therapy, (2) Psychological flexibility was a strong predictor of better adjustment to cancer and quality of life, (3) Psychological flexibility can be improved with Mindfulness and Acceptance based interventions such as Acceptance and Commitment Therapy.

**Discussion or Conclusions:** **Conclusion and clinical implications:** The identification of early and significant predictors of adaptation such as psychological flexibility may offer an opportunity for the development of targeted and effective programs to prevent (and not only reduce) the biopsychosocial burden of cancer. High-quality and well-designed controlled trials are needed to further explore the results so far published.

### 514 | PSYCHOLOGICAL FLEXIBILITY AS PREDICTOR AND TARGET FACTOR IN PATIENTS' ADJUSTMENT TO BREAST CANCER

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**Background/rationale or Objectives/purpose:**

**Objectives:** The goal of the present study was to examine the predictive role of Psychological Flexibility in adjustment to breast cancer, and to identify its possible correlations with the development of psychological co-morbidity such as depression, anxiety or distress.

**Methodology or Methods:** **Methods:** 150 women were recruited for this cross-sectional study before and after breast cancer surgery and at follow up. Each participant filled self-report questionnaires assessing cognitive fusion (The Cognitive Fusion Questionnaire, CFQ), psychological flexibility (Acceptance and Action Questionnaire II, AAQ-II), self-compassion (Self-Compassion Scale, SCS), adjustment to Cancer (Mini-Mental Adjustment To Cancer, MINI-MAC), quality of life (EORTC - QLQ-C30), anxiety and depression (Hospital Anxiety and

Depression Scale, HADS). Correlation, linear regression and conditional process analysis was used to explore relationships between predictor variable and psychological outcomes (anxiety, depression, distress, quality of life).

**Impact on practice or Results:** Results: Significant correlations were found among the observed variables. Cognitive fusion, compared to other independent variables (experiential avoidance, coping strategies, Self-Compassion) was a significant predictive factor for anxiety instead of the strongest predictors of depression were avoidant coping and distress. Moreover, the results highlighted the correlation between the level of psychological distress and treatment period. High levels of distress are observed in the pre-surgical period. Finally, higher psychological flexibility significantly contributed to predict lower anxiety, depression at follow-up.

**Discussion or Conclusions:** Conclusion and clinical implications: Psychological flexibility was a strongest predictor of adjustment to breast cancer and quality of life. Interventions focused to improve the psychological flexibility can prevent and reduce biopsychosocial burden of oncological disease.

### 496 | One-year experience of the e-training Neurographica program for cancer patients, pros and cons

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**Background/rationale or Objectives/purpose:** Neurographica is a graphic method of accompany the life changes. It may be used in different fields of human life, including health. One year ago, was developed a special supporting program of Neurographica for women during chemo treatment. The objects was to provide support patients in different part of Russia and to give them the instrument of self-care for improve and hold good quality of life.

**Methodology or Methods:** Neurographica is an art-therapy approach by P. Piscarev, Russian psychologist. More than 25,000 people in 36 countries are already practicing it. It helps people to express and change their inner state of being by engaging emotional and aesthetic intelligence to find solutions to a variety of problems by means of simple drawing.

**Impact on practice or Results:** One-year experience shows that Neurographica training may be used online with benefits for patients. The most cancer patients could improve quality of life during one month. They could do it at home without necessity to move out for sessions. There is important enforcement to instructors of Neurographica for successful training, if they work with cancer patients.

**Discussion or Conclusions:** Neurographica looks very easy and makes an illusion of unconditional success in health-care. In very deed instructor has to understand the specialty of cancer patients' psycho and online behavior for good result. The training program helps instructors to achieve patients' quality of life progress.

### 490 | Peer Support Needs of Adolescents and Young Adults with Cancer and Preferences for a Digital Peer Navigation App

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**Background/rationale or Objectives/purpose:** Adolescents and young adults (AYAs) with cancer frequently report social isolation, want to connect with peers, and desire support to navigate cancer. Our team of patient partners and researchers investigated the need for, and barriers to peer support, and interest in a peer navigation digital app.

**Methodology or Methods:** We administered a survey to AYAs diagnosed with cancer at Princess Margaret Cancer Centre (PM), and through social media. Descriptive summary statistics were calculated.

**Impact on practice or Results:** The sample included 412 AYAs ( $M_{age} = 31.24$ ,  $SD = 6.3$ ); 214 recruited from PM, and 198 from social media. Mean time since diagnosis was 4.08 years ( $SD = 3.8$ ), and 64% were female. The majority (76%) wanted to connect with other AYAs. Half (50%) talked to a healthcare professional about peer support, and 37% received a referral. However, 55% of PM AYAs did not try to connect with other AYAs, with the inconvenience of in-person peer support programs, and privacy concerns with social media platforms identified as the main barriers. The majority (80%) want a digital app to connect and communicate with a peer, 67% want a trained peer to provide support, and 63% are interested in being a peer navigator. Foremost peer matching characteristics are cancer type, treatments, and age at diagnosis. Most AYAs are seeking information and emotional support from a peer at diagnosis and throughout the cancer journey, and less so practical support or social companionship.

**Discussion or Conclusions:** There is a need for a peer navigation digital app to connect and facilitate peer support among AYAs with cancer.

#### 485 | The Acute Treatment Phase of Cancer as a “Teachable Moment”: User-Centered Design and Usability Testing of the ‘I-Can Manage’ Online Self-Management Program

*Doris Howell<sup>1,2</sup>, Jonathan Avery<sup>1</sup>, Denise Bryant-Lukosius<sup>3</sup>, Vishel Kukreti<sup>1</sup>, Lesley Moody<sup>4</sup>, Kristen Hasse<sup>5</sup>, Saeed Moradian<sup>1</sup>, Mike Lovas<sup>6</sup>, Athina Santiguada<sup>7</sup>, Samantha Mayo<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Cancer lags in the routine provision of self-management support (SMS) leaving patients vulnerable to worse health outcomes. SMS delivered online to capitalize on the acute phase of cancer as a “teachable moment” has potential to alter the clinical course of cancer. This presentation will describe the co-design process, features/functions, and usability testing of the online ‘I Can Manage: Cancer Self-Management Program’ that focused on building self-management skills and strategies to address the acute effects of cancer treatment.

**Methodology or Methods:** We used a four-step user-centered, co-design process including qualitative interview data ( $n = 14$ ), journey mapping with patient partners ( $n = 15$ ), and usability testing in mixed-cancer populations (lung, lymphoma, breast, colorectal) ( $n = 8$ ), and user testing to design the online self-management program. The features and functions of the program were designed based on Bandura’s Self-Efficacy Theory and emphasized building core self-management skills (i.e. goal setting and action planning) and behaviours to manage the acute effects of cancer treatment.

**Impact on practice or Results:** Patients described a need for the online program to “normalize” their experience of cancer treatment and the “actions” they could take to “minimize” the acute effects of treatment. Think aloud data from usability testing revealed a need to consider the acute effects of treatment (i.e. neuropathy) in the online program design in addition to functions that could support application of core self-management skills and problem-specific behaviours.

**Discussion or Conclusions:** Patients require SMS to manage the complex medical, psychosocial, and lifestyle changes in the acute phase of cancer. Early support could facilitate better adjustment and improve health outcomes.

#### 461 | Distance Art Therapy Groups for Young Adults with Cancer

*Sara Hankinson*

*BC Cancer, Vancouver, Canada*

**Background/rationale or Objectives/purpose:** Young adults with cancer (YAs) have unique needs, and therefore require specialized support. BC Cancer launched its first support group for YAs in 2011: an in person, art therapy group. In 2012, we began developing methods for supporting patients from a distance. First, the website CancerChatCanada was used to host art therapy groups online. In 2018, the author piloted using Skype for Business (SfB) to host an art therapy session. In April 2019, the first Distance Art Therapy Group (DATYA) took place.

**Methodology or Methods:** The group met using Skype for Business (SfB) for four weeks in April. The art therapist was located in Vancouver, and group members joined from their homes. Each week, participants were given an art therapy exercise to complete on their own time, with their own materials. During the Skype session, participants shared experiences, resources and their artwork. During one session the group was also led through a drawing exercise.

**Impact on practice or Results:** The results of this pilot group are still being gathered. There were three participants, all of whom were located outside of Vancouver and grateful to be able to access support from their own home. Results will be compiled soon and another DATYA group will run in the Summer or early Fall of 2019.

**Discussion or Conclusions:** YAs are a population with great need for support and connection. In person and online groups have proven to be successful platforms for them to connect. We expect the DATYA group to provide another effective opportunity for YAs to access this valuable support service.

#### 403 | Is therapist support needed in Online interventions to reduce Fear of Cancer Recurrence?

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**Background/rationale or Objectives/purpose:** We need easy-accessible interventions to help patients that suffer from Fear of Cancer Recurrence (FCR). We will present insights about the usefulness of both guided and unguided online interventions that aim to reduce FCR.

**Methodology or Methods:** In the CAREST trial (a consecutive cohort of 262 curatively treated breast cancer patients), participants were randomly allocated to a CBT-based self-help intervention or treatment as usual (TAU). We tracked login times and responses of the self-help training and semi-structured interviews were conducted. In the BE-MIND trial we included 245 distressed ( $\geq 11$  on the Hospital Anxiety and Depression Scale (HADS)) cancer patients. In both trials outcome (Fear of Cancer Inventory (FCRI-NL severity subscale) was analyzed using Linear Mixed Modeling on the intention-to-treat sample.

**Impact on practice or Results:** User data indicated 87 patients logged in at least once and completed an average of 2 modules of the total 3 basic modules and 4 optional modules of the unguided intervention. Coping style and positive expectations predicted CAREST program usage. Qualitative results showed patients perceived benefit from the program but missed personal guidance. Compared to TAU (T0:  $M 21.13$ ,  $SE .83$ ; T1:  $M 20.14$ ,  $SE .83$ ) the guided eMBCT program (BEMIND)

significantly reduced FCR (T0: M 21.20, SE .61; T1: M 17.43, SE .74;  $d = .53$ ). Less FCR was a working mechanism for less distress at follow-up.

**Discussion or Conclusions:** Including more support in online self-help may increase adherence and consequently benefit for patients. Guided eMBCT is a helpful intervention in reducing FCR in distressed cancer patients.

### 393 | Systematic self-screening of insomnia and proposition of a Video-Based Cognitive Behavioral Therapy for Insomnia in French adult cancer outpatients: quantitative and qualitative results of the SLEEP-4-ALL-1 pilot study

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**Background/rationale or Objectives/purpose:** Insomnia is still poorly addressed in cancer care despite its high prevalence. Online self-administered interventions may improve access to health care. A Video-based Cognitive Behavioral Therapy for Insomnia (VCBT-I) has already been shown to be efficacious in breast cancer survivors. Its applicability has never been tested in other cancer populations.

**Objectives:** Assess: (1) the feasibility of a systematic self-screening of insomnia, (2) the acceptability of the systematic proposal of the VCBT-I program, and (3) the perceived benefits.

**Methodology or Methods:** **Methods:** A mixed longitudinal method approach was used (Insomnia Severity Index, Edmonton Symptom Assessment System, Treatment Perception Questionnaire and semi-structured interviews).

**Impact on practice or Results:** **Results:** Within 2 months, 177 patients were included: 54.1% were women; 62.2% were in treatment; 34.9%, 22.7%, 22.7%, 19.8% had breast, colorectal, urological or pulmonary cancer respectively. Preliminary results confirm (1) the feasibility of the self-screening ( $n = 177/199$ , 89%); (2) the acceptability of the VCBT-I: 80% of patients with insomnia ( $n = 79/99$ ) accept to participate to this program; (3) The VCBT-I is regarded as an attractive, simple device, accessible to everyone in first qualitative feedbacks ( $n = 10$ ). Numerous benefits are described (increased knowledge about sleep, stimulus control, implementation of recommendations). Despite a persistent insomnia, some patients describe a new relationship with this symptom (modifying dysfunctional thoughts and attitudes about sleep, putting their sleep problem into perspective) and don't ask for additional help.

**Discussion or Conclusions:** **Discussion:** These first results are encouraging and arise several questions about the best way to support patients during and after this intervention and the best evaluation outcomes (Insomnia Severity Index score versus subjective perception of insomnia).

### 384 | LIVE: Patient-Reported Outcome Feedback and a Web-Based Self-Management Intervention on Psychological Distress, Self-Management Skills, and Satisfaction with Information Provision - Results of Randomized Controlled Trial

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**Background/rationale or Objectives/purpose:** The objective of the Lymphoma InterVENTion (LIVE) trial is to examine whether feedback to patients on their patient-reported outcomes (PROs) and access to a web-based self-management intervention will increase self-management skills and satisfaction with information, while reducing psychological distress.

**Methodology or Methods:** The RCT consisted of three arms: (1) standard care, (2) PRO feedback, and (3) PRO feedback plus the Living with lymphoma self-management intervention. Patients diagnosed with lymphoma were selected for participation and invited via their haemato-oncologist 6–18 months after diagnosis. The PRO feedback includes a graphical overview of patients' symptom and functioning scores and an option to compare their scores with other patients with lymphoma and an age- and sex-matched normative population. The Living with lymphoma intervention is based on cognitive behavioral therapy and includes information, assignments, assessments, and videos. Primary outcomes were changes in self-management skills (HeiQ), satisfaction with information (ISQ), and psychological distress (HADS), assessed at baseline (T0) and after 4 months (T1). Statistical (analysis of covariance) and clinical effects (reliable change index) will be tested in an intention-to-treat analysis (T0 and T1).

**Impact on practice or Results:** 226 patients were randomized and completed baseline questionnaires. Currently, the response rate for T1 is approximately 80%. Data collection of T1 will be complete in May 2019 and trial results will be first presented at the IPOS conference.

**Discussion or Conclusions:** When effective, PRO feedback and Living with lymphoma could serve as easily and widely accessible interventions for coping with lymphoma.

### 369 | The trade-off between privacy and community in an online lifestyle group intervention for breast cancer survivors

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**Background/rationale or Objectives/purpose:** Obesity amongst breast cancer survivors (BCSs) is a risk factor for recurrence and other illnesses, and can negatively impact psychosocial functioning. Services aimed at helping BCSs maintain a healthier weight and lifestyle are needed. Given the increasing evidence in support of Internet-delivered health care, this Healthy Lifestyle Modification after Breast Cancer (HLM-ABC) intervention was delivered via an online, group-based learning platform.

**Methodology or Methods:** The HLM-ABC intervention is a 10-week psychoeducational group program aimed at helping BCSs develop a healthier lifestyle through modification of behavioural, cognitive, emotional, and physiological habits. Group members log in to the secure website to view a weekly video, complete homework assignments, and post on the interactive discussion board. This study involved a thematic analysis of post-treatment feedback from the 14 participants who completed the pilot HLM-ABC intervention.

**Impact on practice or Results:** Findings suggest that the inclusion of precautionary measures intended to protect participant privacy and offset potential harm in an online, asynchronous psychoeducational group (e.g., exclusion of last names, omission of visual or personal identifiers) inadvertently detracted from optimal sharing and sense of community.

**Discussion or Conclusions:** eHealth interventions are tremendously valuable resources, especially for increasing access to care; however, they also pose unique challenges to the privacy and confidentiality of those using them and to clinicians' ability to mitigate potential harm. This study emphasizes the need for careful consideration and management of the risks, benefits, and limits of online group services. Findings reveal

promising strategies for balancing competing principles of protection of privacy, responsible caring, and group member personal disclosure.

### 350 | Addressing women's knowledge of breast cancer genetic risk: A pilot study of perceptions regarding an innovative web-based platform

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**Background/rationale or Objectives/purpose:** With the availability of new genetic tests for breast cancer risk, a preliminary interactive web platform was developed, and pilot tested among women in the general population to gain insights into perceptions of its content and features.

**Methodology or Methods:** Women (N = 30) aged 30 to 60, with no history of cancer, were recruited through community settings and randomly assigned to hypothetical risk levels: near population, intermediate or high. Upon viewing the content accordingly, interest in the platform was rated on a questionnaire. A subsample (n = 18) also participated in follow up semi-structured interviews. They were asked for their impressions, as well as recommendations for improvement on the information, features, and visuals

**Impact on practice or Results:** Platform sections were rated for interest with "Understanding your risk" being the highest (96.3%), followed by "screening and follow-up" (92.6%), and "lifestyle" (92.6%). Satisfaction was high for risk-related information in terms of being "just the right amount"; easy to understand, useful and well-researched and not overwhelming. Visuals received the most feedback for improvement wanting larger text, more colours, less photos and more videos.

**Discussion or Conclusions:** The PREVENTION platform seeks to support processes of risk identification, screening and prevention of breast cancer by meeting the information needs of women in the general population. Revisions of content and refinement of visuals may further increase engagement. Next steps include further testing in larger samples of women. Once implemented, PREVENTION has the potential to support an ever-growing segment of the population that uses genetic testing to assess their breast cancer risk.

### 333 | Patient and clinician perspectives of self-management needs in the acute phase of cancer: Development of the 'I Can Manage Cancer' self-management intervention

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**Background/rationale or Objectives/purpose:** Cancer is a physically and emotionally overwhelming experience. Patients benefit from self-management (SM) support, but report limitations in the type and amount of SM support they receive from healthcare professionals in the acute treatment phase of cancer. To intervene in this critical period, our team is developing a web-based self-management system, called I Can Manage Cancer (ICMC). The purpose of this presentation is to report patient and clinician perspectives on self-management needs in the diagnosis and treatment period, and desired features and functions of SM support to guide the development of ICMC.

**Methodology or Methods:** Employing user-centered design, we used descriptive qualitative methods, conducting interviews with people

diagnosed with cancer (n = 16) and focus groups (n = 3) with cancer clinicians (n = 19). Data were thematically analyzed using NVivo qualitative software.

**Impact on practice or Results:** Our findings make evident the need for SM support with recurring themes related to SM and support, including: (1) uncertainty, fear, and lack of control; (2) looking inward/outward for support and strength; (3) system gaps; and (4) solutions to control and normalize the situation. We also explored desired features, functions, and content of ICMC to address these needs, identifying: user-friendly; connected (but private); and evidence-based digestible and trustworthy health information, as key themes.

**Discussion or Conclusions:** Our findings recognize gaps in SM identified by patients and clinicians and articulate the features and functions of SM important to people with cancer and their clinicians. Significant overlap between patient and clinician perspectives regarding both content and functions bodes well for future implementation and uptake in clinical settings.

### 331 | Virtual reality for relaxation: tailoring digital experiences on breast cancer patients

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**Background/rationale or Objectives/purpose:** Cancer patients and survivors face physical and psychological challenges related to side effects of treatment (e.g., body image distortions, stress, and struggle to adopt a healthy lifestyle). Virtual reality (VR) is currently used to deliver immersive relaxation training; however, generic virtual environments for relaxation are used (i.e., calm natural scenarios with audio narratives such as breath control guidance), and design guidelines tailored on cancer patients are lacking. By adopting a user centred design approach, we aim to gather patients' reports on relaxation and relate them to the VR experience to orient future VR design.

**Methodology or Methods:** 16 breast cancer survivors were interviewed after completing a VR relaxation session. Patients were asked 1) to imagine describing their VR experience to a relevant person, and 2) to describe past effective relaxing experiences, comparing them with the VR experience. Thematic analysis was conducted on reports.

**Impact on practice or Results:** reports described perceptual features mostly focused on body sensations and awareness, the most frequent being warm temperature (related to voice, colours, body temperature). The modality patients perceived as inducing relaxation the most was hearing (music, water sounds and guiding voice), rather than sight.

**Discussion or Conclusions:** body-focused exercises (e.g., inducing warmth and weight sensations) should be preferred to breathing and cognitive ones in targeting cancer patients' relaxation with the VR. Results also stress the importance of tailoring hearing stimuli rather than visual scenarios on cancer patients needs, in particular in building narratives to guide patients in gradually and safely perceiving their own body.

### 319 | The eLIFT educational video platform: a resource to improve prostate cancer information availability and patient knowledge

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**Background/rationale or Objectives/purpose:** There is an absence of validated resources for prostate cancer survivors. With the support of Prostate Cancer Canada, we have developed the electronic Library for Improved Function (urinary and bowel) post Treatment (TrueNTH-PCC-eLIFT). This consists of a comprehensive English and French on-line educational video library of urinary and bowel side effects and their management.

**Methodology or Methods:** We conducted a prospective cohort study comparing outcomes for patients who were given access to eLIFT (N = 23) or standard of care (SOC) (N = 44) after undergoing curative-intent local treatment (prostatectomy, external beam radiation, brachytherapy). The relative impact of eLIFT versus SOC was assessed at baseline and 26 weeks.

**Impact on practice or Results:** After adjustment for propensity score and curative treatment, eLIFT patients in our cohort were observed to be more likely to search for active information than SOC patients at baseline (OR = 1.26; 95% CI: 0.17 to 9.53) but less likely to do so at 26 weeks (OR = 0.81; 95% CI: 0.12 to 5.40). At both time points, the mean total knowledge score of side effects was observed to be higher by 0.9 points in the eLIFT cohort (one-sided 95% CI: 0.1 to  $\infty$ ).

**Discussion or Conclusions:** Less active search at 26 weeks in the eLIFT cohort may imply more satisfaction with the videos and information they received compared to SOC. Patient's knowledge of treatment side effects improved in the eLIFT cohort compared to SOC. eLIFT is a good medium for knowledge transfer and patient empowerment. We aim to integrate this resource into clinical practice across Canada.

## 297 | Pilot Evaluation of a Web-based Peer Navigation Program for Prostate Cancer: Impact and Perspectives of Patients, Caregivers and Peer Navigators

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**Background/rationale or Objectives/purpose:** Purpose: To evaluate the feasibility, acceptability and potential effects of a web-based peer navigation program for prostate cancer patients and family caregivers.

**Methodology or Methods:** Methods: We conducted a sequential, mixed-methods study of the TrueNTH Peer Navigation Program at two urban cancer centres in Canada. Prostate cancer patients or family caregivers (participants) were matched online with a trained peer navigator (PN) who provided tailored support.

**Impact on practice or Results:** Results: Fifty-one participants (66.5%) were matched with one of 20 PNs. Of these, 34 participants (66.5%) completed pre/post questionnaires and 20 were interviewed. All PNs completed pre/post questionnaires and 18 participated in focus groups. Participant satisfaction (M = 8.5/10, SD = 2.1) and PN satisfaction (M = 8.1/10, SD = 1.15) was high. Participants reported significant increases in pre/post scores for prostate cancer quality of life ( $t(27) = 5.6$ , p

**Discussion or Conclusions:** Conclusions: A web-based peer navigation program for prostate cancer patients and family caregivers is highly acceptable and associated with improvements in quality of life, perceived support and patient activation.

## 275 | A logic model method for e-Health intervention planning for a cancer stigma reduction communication program in the general population

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**Background/rationale or Objectives/purpose:** To reduce cancer stigma and improve communication with people with cancer, an e-Health communication program targeting the general Japanese population was developed using a logic model to plan the intervention.

**Methodology or Methods:** We used literature reviews, two surveys, and evaluation assessments. We searched the Cochrane database of systematic reviews to identify evidence with medium effect sizes on types and components of interventions. We surveyed cancer survivors and people without any history of cancer to determine the content of the program. The results of these three studies were synthesized, and a logic model developed to show how interventions lead to short- and long-term outcomes and effects. To ensure the program quality and delivery were appropriate, feedback on the model was sought from external experts, using questionnaires.

**Impact on practice or Results:** The Cochrane reviews showed that computer interventions, including multiple components within one media type and first-person narratives, were effective ways to reduce prejudice. The surveys showed that medical information and advice on how to interact with friends with cancer would improve communication and relationships. A multiple component e-Health program was developed with linkages between the intervention and outcomes underpinned by psychological theories in a logic model. Feedback from external experts was relatively good, and helped us to revise inappropriate terminology and implicit descriptions of components.

**Discussion or Conclusions:** A logic model is useful to synthesize evidence and hypothesize the pathways for complex interventions. This method may help with intervention planning of clinical studies.

## 271 | Implementation and Evaluation of Patient and Caregiver Reported Outcomes to Improve Real Time Symptom Management in Cancer Care Across Quebec with Mobile Technology: The e-IMPAQc Project

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**Background/rationale or Objectives/purpose:** Based on previous findings, we found that Patient-Reported Outcomes (PROs) completed by oncology patients electronically at point of care was acceptable and provided immediate, focused discussions with clinicians regarding symptom management. The aim of e-IMPAQc is to implement and evaluate the effect of the systematic electronic assessment of PROs and Caregiver Reported Outcomes (CROs) on patient and caregiver outcomes using a mobile application to integrate PROs data into the electronic health record.

**Methodology or Methods:** Six cancer centres in Quebec will participate in the initial pilot project. We will phase in an implementation that includes: education of clinicians regarding management of PROs (and CROs), mapping of care pathways for each PRO based on evidence-based cut-off scores, and a stepped-care approach (including provision of patient self-management resources). The ESAS-r (plus additional physical symptoms), Distress Thermometer and Canadian Problem Checklist will be used as initial screening tools with cut-off scores triggering secondary PROs initially for anxiety, depression, pain and fatigue. Feedback summary reports will be developed for each cancer centre to provide clinicians at point of care for discussion of actionable items. Each phase will be evaluated using a mixed methods approach.

**Impact on practice or Results:** Early identification of problem symptoms will lead to improved communication between clinicians, patients and care-givers, and timely, focused interventions (including self-management) to address symptoms expediently, improve quality of life, and provide lessons for roll-out across the province.

**Discussion or Conclusions:** The implementation of e-IMPAQc is in collaboration with Quebec Ministry of Health and aligned with current distress and symptom screening and management guidelines.

### 237 | “Apps, Apps, and more Apps: A review of Apps use in Cancer Patient Care?”

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**Background/rationale or Objectives/purpose:** Objective: Self-help or medical mobile applications (apps) are being developed and deployed daily with use growing exponentially to promote health and wellbeing worldwide. However, little evidence exists on effectiveness or usefulness among oncology patients during treatment. A scoping review was conducted primarily to examine the state of science around usefulness of mobile applications in oncology patients during treatment. A secondary goal was to assess apps for any built in psychosocial components for patient use.

**Methodology or Methods:** Methods: Three authors independently searched and reviewed peer-reviewed articles at the title and abstract level. All authors collectively reviewed articles at the abstract and full-manuscript level. Four databases were searched using a variety of search terms. Inclusion criteria were: published in English, between 2014 to 2018, adult oncology patients undergoing treatment, mobile application use during treatment, and psychosocial components within the apps used. A scoping review approach was taken and thematic data around usefulness was extracted and summarized.

**Impact on practice or Results:** Results: The combined searches identified a total of 21 articles for review. Findings suggest that mobile applications may be useful for oncology patients undergoing treatment. Some had psychosocial components for use, by patients, but not all. The majority of studies had poor generalizability and described newly developed applications that are not readily accessible across the globe.

**Discussion or Conclusions:** Mobile applications have the potential to transform the care and management of oncology patients during treatment. Unfortunately, how to effectively use apps clinically remains uncertain. Therefore, researchers should consider new or replicating studies with available applications to assess usefulness in North America.

### 225 | Examining Relationships Between mHealth Use and Cancer Prevention Beliefs Within the U.S. Population: Results from the 2017 and 2018 National Cancer Institute Health Information National Trends Survey (HINTS)

*Camella Rising, April Oh*

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**Background/rationale or Objectives/purpose:** Based on the Common-Sense Model of Self-Regulation, mhealth may facilitate adoption of cancer risk-reducing behaviors by helping individuals create action plans and receive feedback on action plan efficacy to prevent cancer. Perceptions about cancer preventability may influence these action plans and resultant behaviors. We aimed to examine a hypothesized association between mhealth use and higher perceived cancer preventability among a nationally representative sample of the U.S. population.

**Methodology or Methods:** NCI HINTS data was used to categorize respondents (N = 6,789) as mhealth users (n = 3,517) or nonusers (n = 1,832). Inclusion criteria for users included: having health apps on a smartphone/tablet and/or using apps to track health goals and/or using other devices to track health; nonusers reported none of these mhealth usage patterns. Perceived preventability was measured by one item: “There’s not much you can do to lower your chances of getting cancer.” Data were weighted and regression analyses conducted in SAS.

**Impact on practice or Results:** Compared to mhealth users, nonusers were more likely to be pessimistic about cancer preventability (OR = 1.44, CI = 1.13, 1.82, p = .003). However, after sociodemographic and health-related covariates were included in the model, the relationship was nonsignificant. Instead, non-white race, lower education, overweight/obesity, and not being a cancer information seeker were significantly associated with lower perceived preventability.

**Discussion or Conclusions:** Findings suggest perceived preventability is more strongly related to sociodemographic and health-related factors than mhealth use. Clinicians could consider that patients may not perceive their mhealth tracking as cancer preventive. However, since relatively more people are users, mhealth remains a potential tool for reach in cancer prevention.

### 223 | Creating awareness regarding social consequences of advanced cancer and enhancing support skills in health care professionals: a pilot study

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**Background/rationale or Objectives/purpose:** Social isolation is common for patients with advanced cancer. Social support can protect patients from feeling isolated and increase their psychological wellbeing. Especially in advanced cancer patients, healthcare professionals become an important source of social support. However, healthcare professionals are often primarily focussed on the patients’ physical condition. A workshop was developed to create awareness in nurses regarding the social consequences of advanced cancer and enhance their support skills. The aims of this pilot study is to evaluate the feasibility and effectiveness of the workshop.

**Methodology or Methods:** A workshop with an experienced learning approach was developed. The workshop consisted of a patient story explaining the issue followed by a VR experience, a theoretical part including discussions, and role play sessions. Questionnaires regarding awareness, knowledge, and support skills were administered before and after the workshop. Nurses were asked to participate in our workshop between October 2018 and February 2019.

**Impact on practice or Results:** In total four workshops were organised with 6–10 participants in each session. In general, the workshop was positively rated by the participants. Especially the VR experience and roleplay received positive responses. The workshop increased the level of awareness and facilitated reflection in participants on their professional skills.

**Discussion or Conclusions:** The pilot study shows that the workshop has the potential to increase the level of awareness and support skills in nurses regarding social consequences of advanced cancer. Technical

issues in the VR experience should receive attention to optimise effects. Further research is necessary to determine in which subpopulations the intervention is most suitable.

### 219 | Development of an intervention to promote physical activity in cancer survivors using a publicly available smartphone app

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**Background/rationale or Objectives/purpose:** Physical activity (PA) ameliorates many consequences of cancer treatment (e.g. fatigue, quality-of-life). We used mixed-methods with the aim of developing an intervention using a smartphone app to promote PA in breast, prostate and colorectal cancer survivors in the UK.

**Methodology or Methods:** A systematic review and meta-analysis synthesised available evidence for the effect of digital interventions on PA in cancer survivors (Study 1). Study 2 assessed interest in digital interventions in 5,840 cancer survivors and explored associated participant characteristics. Qualitative interviews sought cancer survivors' experiences of using selected publicly available PA apps (Study 3) and cancer Clinical Nurse Specialists (CNSs) perspectives on PA promotion and the role of PA app interventions in cancer care (Study 4).

**Impact on practice or Results:** Study 1 showed that on average, digital interventions increase cancer survivors' moderate-vigorous PA by 40 minutes per week. Study 2 found that 24% of cancer survivors report interest in app-based interventions. Interest was related to several sociodemographic and participant characteristics. Study 3 found that PA apps must acknowledge the varying needs and preferences of cancer survivors. Apps that promote walking were favoured and recommendations from CNSs are valued. Study 4 showed that CNSs were positive about the use of apps to complement existing PA promotion in cancer care and provided insight into how app-based PA interventions could be implemented in routine cancer care.

**Discussion or Conclusions:** Together, these studies led to the development of a randomised controlled trial using a PA app in cancer survivors, which has secured funding and will be the next phase of this research.

### 108 | Cognitive Behavioral Therapy for Insomnia: A Virtual Supportive Care Program to address Symptom Management Needs in Cancer

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**Background/rationale or Objectives/purpose:** Insomnia is common and linked to mood disturbance, decreased treatment responses, and worsened quality of life (QoL) in cancer patients. Emerging evidence suggests that Cognitive Behavioral Therapy for Insomnia (CBT-I) is effective for cancer patients. Internet-delivered CBT-I is currently offered by CancerChatCanada (CCC), a national virtual supportive care program, providing therapist-led group support to Canadians while increasing healthcare access. The objective of the current study was to assess psychological, physical, and satisfaction outcomes of the CCC participants.

**Methodology or Methods:** An 8-week internet-delivered CBT-I program was offered between 2017–2018. Participants were required to read a standardized insomnia manual and completed sleep diary before each session. The Intake assessment included demographics, insomnia severity, and participating reasons. Pre-post program evaluations included cancer-related distress (IES-R), QoL (FACT-G), and post-program satisfaction. Descriptive statistics and paired t-tests were conducted.

**Impact on practice or Results:** Fifty-five patients enrolled and 32 participated. Majority were female (84%), aged between 45–64 years (64%), had breast (40%) or gynecological (25%) cancers, and reported difficulties falling asleep (49%), and/or waking up at night (47%). Reasons for participation were convenience (69%) and comfort (33%). Of those participated, 29 (90%) completed the post-program evaluation; significant improvements in cancer-related distress ( $t = -2.55$ ,  $p = 0.018$ ) and QoL ( $t = 2.23$ ,  $p$

**Discussion or Conclusions:** Preliminary results show that an Internet-delivered CBT-I can significantly improve psychological distress and functional wellbeing while providing emotional and informational support to cancer patients.

### 75 | Primary skin cancer prevention in the age of smartphones: A review of commercially-available applications for promoting sun protection practices

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**Background/rationale or Objectives/purpose:** Primary prevention of skin cancer is best achieved by protecting the skin from exposure to ultraviolet (UV) radiation. The ubiquity of smartphones makes them the ideal tool to disseminate strategies for skin cancer prevention by helping individuals monitor UV exposure, and providing tailored recommendations and reminders. Dozens of applications of varying quality are currently available for download, making it difficult for interested users to find applications with useful and effective features. The purpose of this study was to provide a comprehensive list of sun protection apps and their quality.

**Methodology or Methods:** We searched the Apple and Google Play App stores for smartphone apps that promote sun safety, and results were screened by two independent reviewers according to pre-defined criteria. App quality and potential to promote behaviour change were evaluated using two validated instruments: Mobile App Rating Scale, User Version (UMARS; Stoyanov et al., 2015) and the App Behaviour Change Scale (ABACUS; McKay et al., 2019).

**Impact on practice or Results:** Our search revealed 1,060 results across both app stores (including duplicates), from which we identified 9 eligible apps. Most apps were user-friendly and provided tailored sun protection recommendations based on user skin type. Overall, the quality and potential for behaviour change of individual apps varied widely. All apps were missing tracking and goal-setting features.

**Discussion or Conclusions:** Currently available apps designed to promote sun protection behaviours are missing key elements theorized to promote behaviour change. Once these features are added, further empirical research is required to establish whether the use of these apps results in a sustained reduction in UV exposure.

## J. EXERCISE/REHABILITATION

### 679 | The importance of supportive care in long-term home-based exercise for prostate cancer patients receiving androgen deprivation therapy

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**Background/rationale or Objectives/purpose:** Supportive care in long-term cancer rehabilitation is crucial. This study investigated the importance of regular telephone contact (two times per month) between health care professionals and chemically castrated prostate cancer patients to maintain long-term compliance to home-based exergaming training.



**Methodology or Methods:** One year after the completion of a randomized trial ( $n = 41$ ) a questionnaire on exercise routines, exercise motivation, and the importance of regular contact with health care professionals was collected. In addition, data on physical activity level using the Godin Leisure-Time exercise questionnaire was collected.

**Impact on practice or Results:** The response rate was 88% with 36 returned questionnaires showing that one year post-intervention 38% still practiced exergaming and 33% in the usual care group had increased their physical activity level. Physical activity level was equal in both groups and corresponded to what was seen in the intervention period. 89% found regular telephone contact with health care professionals motivating and 50% found it supportive.

**Discussion or Conclusions:** The technology in exergaming provides instructions on how to perform exercises, goalsetting and increasing physical activity levels, which are considered cornerstones in exercise adherence. However, cancer patients still need the supportive care of health care professionals to comply with exercise guidelines. Future cost-benefit studies on exercise in the supervised setting versus home-based exergaming with telephone support in cancer populations are warranted.

### 676 | Experiences with a Supervised Exercise Program for Individuals with Breast Cancer

*Yvonne Anisimowicz, Ryan Hamilton, Danielle Bouchard, Martin Senechal*

*University of New Brunswick, Fredericton, Canada*

**Background/rationale or Objectives/purpose:** Purpose: With breast cancer mortality rates decreasing and survivorship lasting longer, the physical and psychosocial challenges associated with the after-effects of cancer treatments are also experienced for longer. This study examined how programs designed to help mitigate these challenges are experienced by those who have finished or are currently in active treatment.

**Methodology or Methods:** Methods: Individualized exercise programs were developed incorporating aerobic, resistance training, balance, and flexibility exercises. Twice weekly, participants exercised while supervised by a physiotherapist, clinical nurse specialist, and kinesiology students with specific training for this population. Qualitative interviews were conducted post-intervention to investigate participants' experiences.

**Impact on practice or Results:** Results: Thematic analysis revealed that most participants reported joining the program in hopes of increasing their energy and strength. They chose this program because it was offered by knowledgeable facilitators who provided instruction and exercise plans tailored to their individual needs. It was also attractive because it was a free, structured program, and many felt that signing up would instill a sense of commitment that would motivate them to complete the program. Benefits of participation included increased energy and strength, and mental and emotional improvements. Obstacles to participation included fatigue and poor health, plus difficulties with scheduling and the costs (time, money) associated with travelling from rural areas.

**Discussion or Conclusions:** Conclusion and clinical implications: Despite obstacles arising from being in active treatment, many people seek and benefit from an exercise program tailored to their unique needs. These findings may support the inclusion of structured exercise programs as part of the standard model of care for cancer.

### 638 | Device-measured and self-report physical activity assessment among breast cancer survivors: variation according to intensity and time in survivorship

*Isabelle Doré<sup>1</sup>, Catherine Sabiston<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** This study examined the concordance between device-measured and self-report light, moderate, and vigorous physical activity (PA) among breast cancer survivors over time.

**Methodology or Methods:** Data were collected among a sample of women breast cancer survivors ( $n = 201$ , mean age = 55.0, SD = 11.0). PA was assessed using both self-reported (Leisure-time Physical Activity Questionnaire) and device (GT3X triaxial accelerometer) measures collected every three months during the first year post-treatment (time 1 to 5) and 2 and 4 years (time 6 and 7) post-cancer treatment. Pearson's correlations between self-reported and objective measures were computed for each PA intensity at each of the seven time points.

**Impact on practice or Results:** Device-measured and self-report light intensity PA were not statistically significantly correlated at any of the seven time points ( $r$  vary from -.02 to .18, all  $p > .05$ ). Low to moderate correlations were observed between device-measured and self-report moderate intensity PA, and are relatively stable over time ( $r = .31$  to .46, all  $p.01$ ). Low to moderate correlations between device-measured and self-report vigorous intensity PA were observed and correlations increased over time from  $r = .11$  ( $p = .13$ ) at time 1 to .62 ( $p.01$ ) for time 7. For all PA intensities at every time point, self-report PA overestimate device-measured PA.

**Discussion or Conclusions:** Women overestimate PA, with greatest differences between device-measure and self-report assessments for light PA intensity. Concordance between device-measured and self-report vigorous PA vary over time in survivorship. Use of self-report PA measure among breast cancer survivors might be more appropriate for moderate-to-vigorous PA intensity, especially after one year post-treatment.

### 637 | Move more and sit less: a four-year post treatment study among breast cancer survivors

*Isabelle Doré<sup>1</sup>, Catherine Sabiston<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Despite the recommendations for cancer survivors to engage in physical activity, little is known about the effects of sedentary behaviour on key health symptoms such as depression, pain, and fatigue. Most evidence on lifestyle behaviours focuses on longer-term survivorship rather than early post treatment. Also, lifestyle behaviours are often self-reported. Addressing these limitations, this study prospectively examined the lifestyle behaviours of moderate-to-vigorous physical activity (MVPA) and sedentary time (ST) as predictors of depressive symptoms, pain, and fatigue in breast cancer survivors.

**Methodology or Methods:** Breast cancer survivors ( $n = 201$ , mean(SD) age = 55.0(11.0) years) self-reported depressive symptoms, pain, and fatigue, and wore an accelerometer to measure MVPA and ST every three months during the first year (time 1 to 5) and 2 and 4 years (time 6 and 7) post-cancer treatment. Linear mixed models were adjusted for integral personal (e.g., age, BMI, education, income, marital status) and cancer (e.g., stage, time since treatment) variables.

**Impact on practice or Results:** MVPA and ST were independent predictors of depressive symptoms, but not fatigue, and only ST was associated with pain over four years post-treatment. Higher levels of MVPA were associated with lower scores of depressive symptoms ((95%CI): -0.062(-0.092, -0.031)  $p = .001$ ).

**Discussion or Conclusions:** Rehabilitation interventions should aim to both increase physical activity and reduce sedentary behaviours to promote health and well-being among breast cancer survivors, in particular during the early post-treatment period.

### 624 | Exercise and rehabilitative counselling indications: two proactive approaches against physical impairment for pediatric patients undergoing hematopoietic stem cells transplantation

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**Background/rationale or Objectives/purpose:** To assess the feasibility and efficacy of an in-patient exercise program (EP) vs rehabilitation counselling indications (RCI), in gross motor functions, quality of life (QoL) and fatigue in children undergoing hematopoietic stem cell transplant (HSCT).

**Methodology or Methods:** A cluster time section model was used to divide the participants in an exercise (EG) and control group (CG). The EG (n = 11) performed an EP 5/week (aerobic/strength/flexibility) plus received RCI. The CG (n = 19) received RCI. Outcomes: Motor function (GMFM-ALL), QOL and fatigue (PedsQL cancer module and fatigue) were measure at baseline and after discharge (M = 31days). Fisher and non- parametric tests were used to assess differences at descriptive level. Linear regression model was employed to evaluate the effect of counseling on GMFM-ALL.

**Impact on practice or Results:** Thirty patients  $M_{age} = 12.9 \pm 3.6$  years completed assessments. RCI adherence was 74% for EG and 64% for CG. Participant in CG that adhere to RCI showed less detriment in the gross motor functions compared with the ones that did not follow the counselling (p = 0.006). Overall, 74% of the EG and 64% of CG preserved motor skills between baseline and discharge, without a significant difference. Overall, 11% of EG represented by subjects who didn't have adherence to the EP and 56% of the CG needed rehabilitation after discharge (p = 0.02). No significant differences were detected in QoL and fatigue.

**Discussion or Conclusions:** RCI has a positive effect in preserving gross motor functions during the HSCT hospitalization if participant adhere to it. Performed an EP during HSCT seems to decrease the need of rehabilitation after discharge. Both interventions should be consider as standard care.

## 615 | Associations Between Cardiorespiratory Fitness, Physical Activity and Cognitive Function in Patients with Metastatic Renal Cell Carcinoma: A Study Protocol

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**Background/rationale or Objectives/purpose:** Metastatic renal cell (mRCC) patients on antiangiogenic therapy (ATT) exhibit cognitive impairments. Cancer-related cognitive dysfunction (CRCDD) negatively impacts quality of life. CRCDD is largely under recognized and there are no proven treatments beyond symptom management. Physical activity (PA) and cardiorespiratory fitness (CRF) may mitigate CRCDD. Therefore, the study objective is to examine the independent role of CRF and PA on cognitive function from baseline (prior to initiation of treatment) to 3 months (after initiation of treatment) in mRCC patients.

**Methodology or Methods:** Using a prospective cohort design, mRCC patients scheduled to begin ATT (N = 101) from the Princess Margaret Cancer Centre and Juravinski Cancer Centre will be recruited. Objective and subjective measures of cognitive function will be conducted using the NIH Toolbox Cognition Battery and the FACT-Cognitive Scale (FACT-Cog-3), respectively. PA will be assessed by accelerometry (ActiGraph GT3X+). CRF will be assessed using a submaximal graded exercise treadmill test. Demographic and clinical variables will be collected via self-report and chart review. Separate linear regressions will be conducted where CRF and PA levels at baseline will be used to predict change in cognitive function from baseline to month 3.

**Impact on practice or Results:** in progress

**Discussion or Conclusions:** The study will be instrumental in designing lifestyle interventions to improve cognitive health in mRCC patients. Understanding the broader trajectory of cognitive function will offer insight into the opportune time to intervene. This pilot data will lead to future PA studies that may have a major impact on clinical management of cognitive function in mRCC patients.

## 509 | Exercise and cancer: Characteristics of the rapidly emerging offer of programs across five countries

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**Background/rationale or Objectives/purpose:** People diagnosed with cancer can safely exercise to improve mental and physical health. Yet, little is known about programs available in different settings. This grey literature review identifies and describes exercise programs for people with cancer available in five countries.

**Methodology or Methods:** Programs were identified in Canada, Australia, USA, France, and United Kingdom using directories available on national cancer organizations' websites, articles from the authors' own libraries, and Google. Information about the setting (hospital, community, private), cost (free, low cost, expensive), type of program (group classes, one-on-one sessions, home training), supervision (trained exercise professionals, instructors), and content (cardiovascular, strength, flexibility) were extracted.

**Impact on practice or Results:** A total 134 programs were identified: 17% in hospitals, 44% in community settings, and 27% in private settings. Although there were no differences across countries, there were differences between settings for cost, supervision type, program type and program content. Community programs are mostly free or low cost (83%), supervised by instructors (49%), and offer group classes (75%). Hospital programs are also free or low cost (86%), but are supervised by exercise professionals (47%). Most programs in private settings are based on a fee-for-service model (78%) and the vast majority of them are supervised by exercise professionals (70%) and include customizable content (26%) and type (40%).

**Discussion or Conclusions:** This review indicates that exercise resources are available for people with cancer. However, there is substantial variability in supervision, format, and content across settings. Evidence-based recommendations are required to orient the development and implementation of these programs.

## 482 | Exercise as Medicine for Cancer Patients – the Evolving Role of the Physician

*Lauren Capozzi*

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**Background/rationale or Objectives/purpose:** Evidence clearly supports exercise as a crucial component of care throughout the cancer trajectory, positively impacting physical and psychosocial functioning, and overall quality of life. Physicians play a key role in the promotion of exercise, yet many barriers have prevented the integration of exercise counseling into standard practice. Barriers including lack of training, lack of time, and lack of trusted referral source, have prevented many physicians from discussing exercise with their patients. Fortunately, a

shift to the prioritization of disease prevention and health promotion in medical education is occurring. This presentation will discuss the role of the physician in assessing and promoting exercise and how novel initiatives in medical education are currently being implemented to help increase exercise and wellness literacy skillsets for the next generation of physicians. The promotion of exercise in a clinical setting will also be discussed, including the role of allied health care and fitness professionals in exercise implementation and maintenance.

**Methodology or Methods:** This presentation will focus on the evolution of educational initiatives designed to facilitate the physician's role in promoting exercise as part of standard cancer care.

**Impact on practice or Results:** Discussion will include a review of the current implementation barriers for physicians, and the changes to medical education that will better equip graduating doctors.

**Discussion or Conclusions:** Education of physicians to better understand the role and impact of exercise for cancer patients, how to assess and proceed with recommendations, and how to refer patients to specialized fitness professionals, will positively shift traditional care pathways, forming a new standard in cancer care practices.

### 435 | Family members' perceptions of cancer related fatigue and physical activity

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**Background/rationale or Objectives/purpose:** Physical activity (PA) can improve strength, physical functioning, lead to reductions in cancer related fatigue (CRF) and improve quality of life for those living with and beyond cancer. Family members may have the potential to facilitate or impede engagement with PA, thus the aim of the study was to explore family members' knowledge and perceptions of CRF and PA.

**Methodology or Methods:** This was a qualitative study, with data collected from five focus groups. Questions were derived from the literature and refined in conjunction with members of a Personal and Public Involvement group. Discussions were audio recorded, transcribed verbatim and subjected to thematic analysis. The resultant themes were verified by participants.

**Impact on practice or Results:** Four themes emerged: 1. Family members unmet informational needs surrounding CRF; 2. Perceptions surrounding the duration of CRF; 3. Misconceptions about PA; 4. Uncertainty about PA for CRF and timing of information sharing from healthcare professionals.

**Discussion or Conclusions:** There was a recognition that CRF was debilitating, but it was mainly perceived as a short-term side effect of treatment or a psychological response to having a diagnosis of cancer. Information is needed to dispel myths surrounding the term PA and its role in helping to manage CRF, but this needs to be provided at an appropriate time during the cancer journey. Limitations of study and directions for future research are noted.

### 351 | The effect of physical exercise on employment status and working hours in cancer survivors after chemotherapy

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**Background/rationale or Objectives/purpose:** Cancer survivors often experience difficulties when returning to work. This study evaluated the effectiveness of a supervised aerobic and resistance exercise on employment status and working hours, compared to a waiting list control group (WLC), in cancer survivors after chemotherapy completion.

**Methodology or Methods:** The study is a secondary data analysis of participants in the Resistance and Endurance exercise After ChemoTherapy (REACT) study, who were of working age (n = 160). They were randomized to an exercise intervention (n = 105) or WLC group (n = 55). Outcomes were changes in employment status, and absolute and relative working hours. Questionnaires were completed at baseline (4–6 weeks after treatment) and post-intervention (12 weeks after randomization). Logistic and linear regression analyses were performed, in which we adjusted for age, gender, BMI and hormonal therapy.

**Impact on practice or Results:** Compared to 4% of patients in the WLC group, 15% returned to work in the exercise group (OR = 1.9, 95%CI 0.81;4.58), post-intervention. The exercise group showed 6.2 hours increase in absolute working hours, compared to 4.5 hours in the WLC group (b=2.0, 95%CI -1.7;5.7 hours). The increase in relative working hours was 22.7% in the exercise group, compared to 14.3% in the WLC group (b=8.8, 95%CI -3.8;21.4%). However, none of these findings were statistically significant.

**Discussion or Conclusions:** The observed average increases in the intervention group in the number of participants at work and in working hours may be considered clinically relevant, however they were non-significant. Future studies, designed to evaluate the effect of exercise on work as primary aim, are needed, with exercise as part of a multiple component intervention.

### 313 | Cancer survivors' perspectives on social challenges with participating in group exercise programs

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**Background/rationale or Objectives/purpose:** The purpose of this study was to describe social challenges experienced by participants in group exercise programs for cancer survivors. Group exercise can improve quality of life, but interacting with other survivors may also present challenges related to interpersonal interactions and comparisons that may affect participation. We specifically examined cancer survivors' thoughts and emotions regarding participation in group exercise programs for cancer survivors.

**Methodology or Methods:** Interpretive description methodology guided design and analysis. Cancer survivors (n = 5, 1 male, 4 female; age 46 - 68 years), were purposively sampled from group exercise programs for cancer survivors. Participants completed semi-structured interviews, and themes representing challenging social experiences faced were identified inductively.

**Impact on practice or Results:** Challenging social experiences described by participants included a lack of social support in the group, identifying with other cancer survivors' struggles, and comparing themselves with others in terms of their physical ability or experience with cancer. However, participants also identified that the common experience of cancer with others in the group created a safe space, and seeing others succeed was inspiring and increased effort put into the exercises.



**Discussion or Conclusions:** Cancer survivors face several social challenges and forms of support that may affect their emotions, interactions with others, and participation in an exercise group. Results have the potential to inform future research and development of practical recommendations to help survivors cope with social challenges and access support in exercise programs with other cancer survivors.

## 295 | Affective Response to High-Intensity Interval Training and Moderate-Intensity Continuous Exercise in Overweight and Obese Gynecologic Cancer Survivors

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**Background/rationale or Objectives/purpose:** Gynecologic cancer survivors (GCS) often have poor cardiorespiratory fitness (CRF) which may increase their risk of negative health- and cancer-related outcomes. High-intensity interval training (HIIT) is effective in rapidly producing positive physiological adaptations, including improved CRF, fatigue and quality of life in people with cancer. Compared to moderate-intensity continuous training (MICT), affective response to HIIT has received little attention in cancer survivors despite its practical implications for future exercise participation. The purpose of this study is to compare affective response during (i.e., in-task) and following (i.e., post-task) a single bout of HIIT and MICT in overweight and obese GCS. Secondary outcomes include comparing enjoyment, task self-efficacy, intentions and exercise preferences following HIIT and MICT.

**Methodology or Methods:** Following a baseline maximal graded exercise test, 44 GCS participants will perform acute, 20-minute bouts of HIIT and MICT on separate occasions in a randomized and counterbalanced order. The HIIT session will consist of 10, 60-second intervals at 125% of participants' ventilatory threshold (VT), interspersed with active rest (75% of VT). MICT will be performed at 90% of participants' VT. Affective response will be assessed pre-, during, and post-exercise using the Feeling Scale, Felt Arousal Scale and Activation Deactivation Adjective Checklist. Enjoyment, task self-efficacy, intentions and exercise preferences will be assessed post-exercise.

**Impact on practice or Results:** Data collection is in progress.

**Discussion or Conclusions:** Results from this study, will provide further understanding of the psychological responses unique to HIIT and MICT. This study may inform future interventions to which exercise protocols may optimize adherence and potentially increase exercise participation in GCS.

## 266 | Levels of fitness and physical activity among myeloma survivors: exploring impact on fatigue and quality of life in survivorship

*Orla McCourt<sup>1,2</sup>, Joanne Sowter<sup>2</sup>, Abigail Fisher<sup>2</sup>, Malgorzata Heinrich<sup>2</sup>, Rebecca Beeken<sup>2,3</sup>, Allan Hackshaw<sup>2</sup>, Kwee Yong<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Myeloma accounts for 15% of all haematological cancers. Advances in myeloma treatments have resulted in the fastest increasing survival rates among all cancers, so strategies to improve the quality of survival are required. The MAS-COT cohort study aimed to assess levels of fitness and physical activity (PA) and explore whether these were associated with fatigue and quality of life (QoL) in myeloma patients in remission. We hypothesised that those who were fitter and more physically active would have lower levels of fatigue and better levels of QoL.

**Methodology or Methods:** This study included baseline data from 131 participants, mean age 61.6 (range 35–86), 55% male. Aerobic fitness

(VO<sub>2 peak</sub>) was measured by cardiopulmonary exercise testing, strength was measured on each leg and averaged over both legs (10RM), moderate-vigorous PA (MVPA) was measured objectively (accelerometry) and self-reported (GLTEQ). Patients reported fatigue (FACIT-F) and QoL (emotional and wellbeing subscales of FACT-G).

**Impact on practice or Results:** Mean VO<sub>2 peak</sub> was 18.5 ± 7.2 ml/kg/min. Mean leg strength was 47.1 ± 24.3 kg. Mean MVPA = 35.1 ± 34.9mins/week and self-reported mean PA = 55.2 ± 45.5. Better fitness (b=-.281, p = .007) and greater strength (b=-.373, p = .0004) were associated with lower levels of fatigue. Fitness (b=-.318, p = .002) and strength (b=-.371, p = .0003) were positively associated with QoL. There were no significant associations between measures of PA and fatigue or QoL.

**Discussion or Conclusions:** VO<sub>2 peak</sub> and PA were low in myeloma patients. Aerobic fitness and strength were associated with fatigue and QoL. Future research should develop interventions aimed at enhancing aerobic fitness and strength, and determine if these have a positive impact on fatigue and QoL.

## 265 | Study Protocol: Physiotherapist-led exercise intervention delivered prior to and during stem cell transplant in patients with myeloma

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**Background/rationale or Objectives/purpose:** To investigate the feasibility of delivering an exercise intervention as an integral part of the autologous stem cell transplant (ASCT) pathway for patients with myeloma.

**Methodology or Methods:** 75 myeloma patients will be recruited from a large UK hospital over 18 months to this randomised controlled feasibility trial. The intervention will involve part-supervised aerobic and resistance exercise with behaviour change support, individually tailored and delivered by a physiotherapist in 3 distinct phases – pre-ASCT (partly supervised), during admission for ASCT (supervised) and during recovery post discharge from ASCT admission (unsupervised with telephone support).

Study assessments will be conducted at 4 time-points: 8 weeks prior to planned ASCT, on/near day of ASCT, on/near day of discharge from ASCT hospital admission and 3 months post-ASCT. Primary endpoints will be feasibility measures including uptake, adherence and acceptability of study assessments, attrition and fidelity of intervention. Secondary measures will be fatigue (FACIT-F), quality of life (EORTC QLQ C-30, MY20 and FACT-BMT), functional capacity (6 minute walk test, grip strength, timed sit to stand), physical and sedentary activity levels and healthcare usage.

**Impact on practice or Results:** Results are expected in December 2020.

**Discussion or Conclusions:** The results of this study will contribute to the understanding of introducing exercise and behaviour change support as part of the ASCT pathway, how this relates to experiences of people with myeloma undergoing ASCT and will inform future research into the efficacy of exercise as part of preparation for and recovery from ASCT.

## 258 | Predictors of exercise behavior after exercise training during breast cancer chemotherapy

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**Background/rationale or Objectives/purpose:** To investigate the predictors of exercise behavior at three follow-up timepoints after exercise training during breast cancer chemotherapy.

**Methodology or Methods:** Data were obtained from the Combined Aerobic and Resistance Exercise (CARE) Trial. 301 stage I-IIIc breast cancer patients initiating adjuvant chemotherapy were randomized to either standard aerobic, high-dose aerobic, or aerobic plus resistance exercise. Long-term exercise behaviors were measured at 6-, 12-, and 24-month postintervention using a self-reported questionnaire and participants were categorized as meeting (1) aerobic only, (2) resistance only, (3) combined, or (4) neither exercise guideline. Predictors included demographic and medical variables, physical fitness, patient-reported outcomes, and theory of planned behavior constructs. Univariate and stepwise multinomial logistic regression were used for statistical analyses.

**Impact on practice or Results:** 264 (88%) participants completed all three follow-up assessments and were included in the analyses. Overall, cardiopulmonary fitness measured at postintervention was the strongest predictor of meeting any exercise guideline versus neither exercise guideline at all three time points. Predictors of meeting the combined aerobic and resistance exercise guideline included greater exercise motivation ( $p = .006$ ) and a more detailed plan ( $p = .008$ ) at 6-month follow-up, improved cardiopulmonary fitness between pre- and post-intervention ( $p < .001$ ) and less perceived exercise difficulty ( $p = .005$ ) at 12-month follow-up, and improved upper body strength after the intervention ( $p = .001$ ) and less perceived exercise difficulty ( $p = .015$ ) at 24-month follow-up.

**Discussion or Conclusions:** Predictors of exercise behaviors after exercise training during breast cancer chemotherapy are multifactorial and vary for different timepoints. Greater cardiopulmonary fitness post-treatment may have a positive impact on long-term exercise behaviors.

## 242 | Enhancing physical activity maintenance following an exercise program for cancer survivors: a pragmatic randomized controlled trial

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**Background/rationale or Objectives/purpose:** Physical activity (PA) improves physical and psychosocial outcomes in cancer survivors. Supervised exercise programs can help survivors successfully increase PA, but maintaining PA following program completion is challenging. This study will test the effects of behavior change counseling on PA, three-months following the completion of a clinically implemented exercise program for cancer survivors.

**Methodology or Methods:** Participants will be enrolled in BfitBwell, a 12-week program consisting of supervised aerobic and resistance exercise sessions twice per week. To be enrolled in BfitBwell, individuals must be diagnosed with cancer, and undergoing or  $\leq$  six months of completing treatment at the University of Colorado Cancer Center. Participants will be randomized to receive the current BfitBwell, or BfitBwell plus six, group-based PA behavior change counseling sessions adapted from an evidence-based PA intervention (BfitBwell+) (Rogers et al. 2012). PA will be measured pre-, post-, and three-months following program completion using the Godin Shepherd Leisure-Time Exercise Questionnaire.

**Impact on practice or Results:** At the three-month follow-up, we will compare differences in (1) weekly minutes of moderate to vigorous PA and (2) percent of participants meeting PA guidelines, between participants randomized to BfitBwell, or BfitBwell+. Based on a conjectured difference between means of 74 minutes of PA per week, with a standard deviation of 95,  $n = 30$  per group will achieve 84% power.

**Discussion or Conclusions:** We hypothesize that participants in BfitBwell+ will report more PA at the three-month follow-up compared to participants in BfitBwell. Implications of these findings for clinically implemented cancer exercise programs such as BfitBwell include adding additional behavior change components to improve physical activity outcomes.

## 241 | The Effect of Aerobic Exercise Intensity on Cancer Related Fatigue: A Pragmatic, Randomized Trial

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**Background/rationale or Objectives/purpose:** Cancer-related fatigue (CRF) is one of the most debilitating symptoms of cancer treatment. Exercise can help manage CRF, however the optimal intensity to reduce CRF is unknown. This study will compare the feasibility, and the effects of vigorous versus moderate intensity aerobic exercise on CRF.

**Methodology or Methods:** Participants are adult cancer survivors enrolled in a cancer rehabilitation program at the UC Health Cancer Center and will be randomized to 12-weeks of vigorous interval exercise (2 minutes at 70% Heart Rate Reserve (HRR): 1-minute rest) or moderate continuous exercise (50% HRR). Exercise sessions will be twice per week, and exercise volume will be matched based on MET-minutes. CRF will be measured pre and post-program using the Functional Assessment of Chronic Illness Therapy-Fatigue scale (FACIT-Fatigue).

**Impact on practice or Results:** To assess feasibility, we will compare adverse events, adherence to the exercise protocol, and average duration of exercise between intervention groups. To examine the effects of vigorous versus moderate intensity aerobic exercise on CRF, we will use Analysis of covariance (ANCOVA) to compare post-program FACIT-Fatigue scores between groups, controlling for baseline fatigue.

**Discussion or Conclusions:** We hypothesize that vigorous exercise will be feasible, and on average, take less time per session than moderate exercise. Due to controlling for total exercise volume, we expect no difference in CRF reductions between groups. Vigorous intensity aerobic interval exercise may be a feasible and time conserving method to help reduce CRF in a cancer-rehabilitation setting.

## 229 | Longer-term predictors of exercise patterns after exercise training during breast cancer chemotherapy

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**Background/rationale or Objectives/purpose:** To report the longer-term predictors of exercise patterns during follow-up after exercise training during breast cancer chemotherapy

**Methodology or Methods:** 301 breast cancer patients initiating adjuvant chemotherapy were randomized to either standard aerobic, high-dose aerobic, or aerobic plus resistance exercise in the Combined Aerobic and Resistance Exercise (CARE) Trial. Follow-up exercise behaviors were measured at 6-, 12-, and 24-months postintervention and categorized as meeting the aerobic only, resistance only, combined, or neither exercise guideline at each timepoint. We identified exercise patterns across the three timepoints and predicted the number of times a patient was meeting neither (0-3) or the combined guidelines (0-3) during follow-up. Predict-

tors included demographic, medical, fitness, psychosocial, quality of life, and motivational outcomes at pre- and post-intervention. Univariate and stepwise linear regression were used for analyses.

**Impact on practice or Results:** 264 (88%) participants were included in the analyses. The 5 most common exercise patterns during follow-up were meeting (1) combined or aerobic only (21.2%), (2) aerobic only or neither (13.7%), (3) always neither (11.0%), (4) always combined (9.5%), and (5) always aerobic only (8.0%). A higher number of times meeting the combined guideline was associated with higher strength ( $p = 0.002$ ) and motivation ( $p = 0.017$ ), lower fatigue ( $p = 0.018$ ), and decreased  $VO_{2peak}$  ( $p < 0.001$ ); while a higher number of times meeting neither guideline was associated with lower  $VO_{2peak}$  ( $p = 0.001$ ), less strength ( $p = 0.001$ ), higher difficulty in exercise ( $p < 0.001$ ), and being from Edmonton ( $p = 0.009$ ).

**Discussion or Conclusions:** Longer-term exercise patterns after exercise training are diverse and predicted by physical fitness, motivation, and fatigue.

## 227 | Implementation science and exercise oncology: a partnership critical to improving psychosocial outcomes in cancer survivors

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**Background/rationale or Objectives/purpose:** Objectives: Little is known about translation of evidence-based exercise oncology interventions (EOIs) to non-research settings and whether psychosocial benefits continue after translation. Here we describe our implementation toolkit, psychosocial effects, and implementation outcomes during translation of our efficacious EOI.

**Methodology or Methods:** Methods: We developed an implementation toolkit and performed a proof-of-concept implementation study assessing pre/post-intervention changes in psychosocial (fatigue, anxiety, depression, sleep dysfunction) and implementation (fidelity, acceptability, relative advantage, sustainability) outcomes when our EOI was delivered by a non-research site.

**Impact on practice or Results:** Results: The implementation toolkit included a manual, educational materials, and technical support. The non-research site implemented the EOI with 16 rural women cancer survivors (38% African-American; mean age  $58 \pm 12$  years; mixed cancer types; mean months since diagnosis  $54 \pm 72$ ). Significant pre/post intervention increases occurred for self-report weekly minutes of  $\geq$  moderate intensity physical activity ( $146 \pm 186$ ,  $p = 0.009$ ). Mean change for fatigue intensity ( $-0.6 \pm 2.5$ ,  $p = 0.40$ ), fatigue interference ( $-0.6 \pm 2.1$ ,  $p = 0.28$ ), HADS anxiety ( $-1.3 \pm 1.8$ ,  $p = 0.016$ ), and HADS depression ( $-2.1 \pm 2.0$ ,  $p = 0.001$ ) met or exceeded our efficacy results, PSQI sleep dysfunction did not. Fidelity (range 1 to 4) was high based on interventionist self-report (mean =  $3.9 \pm 0.1$ ) and cancer survivor survey (mean =  $3.4 \pm 0.5$ ). Organizational representatives reported mean acceptability =  $4.9 \pm 0.1$ , relative advantage =  $4.9 \pm 0.2$ , sustainability (political climate) =  $4.5 \pm 0.4$ , and sustainability (cost) =  $4.3 \pm 0.6$  (all with possible range of 1 to 5).

**Discussion or Conclusions:** Conclusion and clinical implications: Using implementation science, we successfully translated an EOI to a non-research setting and achieved meaningful psychosocial benefits.

## 208 | Social support from fellow exercisers: Predictive associations with quality of life and the moderating effect of gender in physical activity programs for cancer survivors

*Emma Wolper<sup>1</sup>, Meghan McDonough<sup>2</sup>, Nicole Culos-Reed<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** Cancer survivors experience quality of life declines that can be enhanced through physical activity (PA) and social support. Comparisons of the predictive effects of the different forms of social support received from fellow exercisers on quality of life in a PA program for survivors have not been examined. Therefore there is a need for continual quantification and conceptualization of the effects of social support on quality of life in the unique social context of exercise programs. Furthermore, gender is a potential moderator of the associations between social support and quality of life, but the majority of work in this area has focused on women with breast cancer, precluding such analyses. This research will examine predictive associations between social support from other participants in a PA program for cancer survivors and quality of life, and whether gender moderates these associations.

**Methodology or Methods:** Adults over the age of 18 years who have participated in a PA program for cancer survivors will complete questionnaires assessing several forms of social support (relatedness, autonomy support, and perceived support for exercise), and quality of life (physical, social, emotional, and functional well-being). Hypotheses will be tested using multiple linear regression. Significant interactions with gender will be graphed and probed using simple slopes analysis.

**Impact on practice or Results:** Data collection and analysis are ongoing.

**Discussion or Conclusions:** This work will contribute to understanding which forms of social support are most strongly associated with quality of life in PA settings, and help inform development of PA programs to enhance wellness for adult cancer survivors.

## 195 | Feasibility and preliminary efficacy of a tailored physical therapy program for Dutch patients with metastatic breast cancer

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**Background/rationale or Objectives/purpose:** To evaluate the feasibility and preliminary efficacy of a tailored, goal-directed and exercise-based physical therapy (PT) program designed for patients with metastatic breast cancer (MBC).

**Methodology or Methods:** We conducted a feasibility study among patients with MBC, including patients with bone metastasis. The PT intervention was delivered in the vicinity of the patients' home and was tailored to the patients' functional limitations, restrictions in activities and personal preferences. Patients set and evaluated their most important therapy goals together with the PT. Patient-reported outcomes (physical functioning, goal-attainment, fatigue, health-related quality of life, and satisfaction) were assessed pre- and post-intervention.

**Impact on practice or Results:** Fifty-five of the invited patients (response rate of 34%) participated in the study. Twenty-five patients dropped out, mainly due to disease progression. No major adverse events related to the intervention were reported. The main PT goal was fully or largely achieved by 22 patients (52%) and only partially achieved by an additional 15 patients (36%). Twenty-eight patients (85%) would "definitely recommend" the program to other patients with MBC. We observed a modest improvement in patient satisfaction with physical functioning (effect size 0.33) and a small but positive reduction in restrictions in activities of daily living (effect size 0.16).



Small but positive changes were also observed for global health status and physical functioning (effect sizes 0.15 and 0.12).

**Discussion or Conclusions:** The tailored, goal-directed PT program for patients with MBC was very well received, was safe, facilitated patients in achieving their individual physical functioning related goals, and may improve quality of life.

### 187 | Preparing educational material for children with cancer: case Finland

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**Background/rationale or Objectives/purpose:** Childhood cancer and its treatment leave children at risk for negative physical and psychosocial early and late effects. Physical activity (PA) promotion has become an important part of the treatment to address such side effects. As part of knowledge translation, educational material to increase awareness about the benefits of PA should be available for health care staff and children with cancer and their families.

**Methodology or Methods:** The work begins with a landscaping questionnaire about PA guidance and materials used in Finnish hospitals. After these preliminaries, infographics and four videos will be prepared. The material will be based on pediatric oncology exercise manual (PO-EM; Chamorro-Viña et al., 2015) and pediatric oncology exercise guidelines which are in progress, with an international team and lead by the University of Calgary (iPOEG and Culos-Reed et al., 2019). The topics of the videos are: 1) The importance of PA in children with cancer, 2) PA during treatment (in-hospital), 3) PA during out-patient phase, and 4) PA in childhood cancer survivors. The material will be published by the Finnish national association for children with cancer and implemented by physical therapists at each hospital.

**Impact on practice or Results:** The need for educational material regarding PA promotion has been acknowledged in Finnish hospitals. After this project, the latest evidence-based knowledge about PA in children with cancer will be available for clinicians and families in Finland.

**Discussion or Conclusions:** International collaboration enables the translation of the latest knowledge and best practices from other parts of the world into Finnish childhood cancer care.

### 177 | The physiatrist's role in cancer rehabilitation and exercise prescription

*David Langelier*

Toronto Rehabilitation Institute, Toronto, Canada; Princess Margaret Cancer Centre, Toronto, Canada

**Background/rationale or Objectives/purpose:** Background: Access to rehabilitation services to improve function and increase levels of exercise amongst cancer survivors are limited. Many survivors are denied rehabilitation or are excluded from exercise interventions because of prescriber fear or discomfort assessing restriction or patient capability. Cancer physiatrists are medical doctors specialized in the diagnosis and rehabilitation of physical impairment, and can provide additional guidance on the safe prescription of exercise.

**Methodology or Methods:** Method: This presentation will focus on the physiatrist's role in cancer care extending from diagnosis through survivorship and into palliative care.

**Impact on practice or Results:** Results: Discussion will include a historical framework from which cancer rehabilitation emerged from the other rehabilitation subspecialties. The unique cancer impairments managed by physiatrists throughout survivorship will be highlighted with case examples. Furthermore, the physiatrist role within the multidisciplinary model of care will be presented with a balanced discus-

sion surrounding political, economic, and technical factors limiting accessibility to physiatry services. Special emphasis will be paid on the unique conditions requiring physical assessment, treatment and restriction when prescribing exercise. Finally, the current state of evidence for cancer rehab interventions and future clinical-research directions will be presented.

**Discussion or Conclusions:** Conclusion: As the number of survivors continues to increase with more effective treatments, so does the number of physical impairments. Physiatrists play a pivotal role in the effective diagnosis and treatment of impairment and exercise prescription. The growing demand for rehabilitation and exercise to be part of standard cancer care represents a dramatic shift in patient value towards survivorship that must be met with open ears and discussion.

### 169 | Social support from physical activity instructors in group exercise programs for cancer survivors

*Meghan H. McDonough<sup>1</sup>, S. Nicole Culos-Reed<sup>1,2</sup>, Emma Wolper<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Social support obtained in exercise programs can contribute to coping with cancer and adherence to physical activity. Most research has focused on support from other cancer survivors, and comparisons to peer support groups. Exercise instructors are also a potential source of support, as they can provide informational and emotional support, and set the tone for social interactions in the group. The purpose of this study was to examine the perspectives of cancer survivors in group exercise programs on what interpersonal interactions with exercise instructors they experienced as supportive.

**Methodology or Methods:** Focus groups (n = 12) and individual interviews (n = 12) were conducted with N = 24 participants in group exercise programs for cancer survivors (n = 19 women; age = 41–75 years, n = 15 breast cancer diagnosis). We used thematic analysis (Braun & Clarke, 2016), and responses were considered in light of social support theory (Feeney & Collins, 2015) that conceptualizes supportive functions that may help cope with adversity, and facilitate thriving.

**Impact on practice or Results:** Instructors helped participants cope with cancer by adapting activities for individual needs and encouraging individual improvement, expressing empathy for coping with cancer, and incorporating mindfulness practices. They supported thriving by engaging participants through facilitating group interaction, modeling exercise, and planning engaging activities; encouraging effort and participation; and building relationships through being friendly, forthcoming, and involved for an extended period of time.

**Discussion or Conclusions:** Results highlight opportunities for exercise staff to support cancer survivors in their classes, and suggest avenues for future research on how to enhance skills for providing effective social support among physical activity practitioners.

### 161 | Social support predicts trajectories of light physical activity in post-treatment breast cancer survivors

*Evelynne Felber Charbonneau<sup>1</sup>, Meghan H. McDonough<sup>1</sup>, Catherine M. Sabiston<sup>2</sup>*

<sup>1</sup>University of Calgary, Calgary, Canada; <sup>2</sup>University of Toronto, Toronto, Canada

**Background/rationale or Objectives/purpose:** Physical activity (PA) can alleviate many challenges encountered by breast cancer survivors. Social support may play a role in that process as it is positively associated with PA and quality of life. Social support is multidimensional, and it is unknown what supportive functions are the strongest predictors of PA. This study examined associations between quantity and quality of support functions, and trajectories of change in objective light and moderate-to-vigorous PA (MVPA) in post-treatment survivors.

**Methodology or Methods:** Women (N = 158, Mage = 55.06) completed quantity and quality of social support measures at baseline (M = 6.98 months post treatment), and objective PA (Actigraph GT3X accelerometers) at baseline and 3, 6, and 9 months. Latent growth curve modeling was used to test whether social support variables predicted trajectories of change in PA.

**Impact on practice or Results:** Greater quantity of listening support was associated with lower initial levels ( $b = -35.72$ ;  $p = .02$ ), but greater increases in light PA ( $b = 11.71$ ;  $p = .02$ ). Greater quantity of understanding breast cancer support ( $b = 8.77$ ;  $p = .07$ ) and total quantity support ( $b = 12.57$ ;  $p = .09$ ) were marginally associated with increased light PA. Social support did not predict MVPA.

**Discussion or Conclusions:** Quantity of listening support and potentially understanding breast cancer support, and total support are associated with increases in light PA. These may reflect a need for introducing providers of support to facilitate behavior change post-treatment, and may be important targets for intervention research on supporting PA. More research is needed to examine whether the unexpected negative association with listening support reflects greater stress or support needs.

### 111 | Acute Effects of Exercise on Fatigue and Energy in Cancer Survivors

*Mary Hidde, Kelley Covington, Heather Leach*  
Colorado State University, Fort Collins, USA

**Background/rationale or Objectives/purpose:** Fatigue is a common, persistent side effect of cancer treatment. Regular exercise can improve fatigue in cancer survivors, but the acute effects of exercise on cancer-related fatigue is not as well understood. This study examined fatigue and energy levels immediately before, and after exercise sessions during an 8-week community-based exercise program.

**Methodology or Methods:** Fatigue and energy levels were self-reported by cancer survivors immediately before, and after exercise sessions using a 0–10 visual analog scale (0 = low, 10 = high). Weekly exercise sessions included moderate-intensity aerobic, resistance, balance and flexibility exercises in a group-based circuit format. Paired samples t-tests examined differences in fatigue and energy levels from before to after each exercise session, averaged across all sessions. Only participants who attended  $\geq 1$  exercise session were included in the analyses.

**Impact on practice or Results:** Participants ( $n = 36$ ) were  $M = 41.94 \pm 25.27$  years old, had been diagnosed with breast (50%), prostate (11.1%), or other cancer (39.9%), and most had completed chemotherapy or radiation treatment ( $n = 26$ , 74.3%). On average, fatigue decreased  $MA = -.57 \pm 1.25$ , [ $t(35) = 2.72$ ,  $p = .010$ ], and energy increased [ $MA = .99 \pm 0.94$ ,  $t(35) = -6.37$ ,  $p = .000$ ] from before to after exercise sessions.

**Discussion or Conclusions:** This study found that exercise had acute, positive effects on energy and fatigue among cancer survivors participating in a community-based exercise program. Results suggest that a single bout of exercise may be an effective strategy for reducing fatigue for cancer survivors. Future studies should examine the effect of different doses of exercise on fatigue and energy levels during and after cancer treatment.

### 37 | Association between the 6-minute walk test and exercise confidence in patients after colorectal cancer surgery: A prospective observational study

*Hui Yang*  
Cancer Hospital Affiliate to School Medicine, Sichuan Cancer Hospital, Chengdu, China

**Background/rationale or Objectives/purpose:** The exercise confidence was very important for patients' rapid recovery after colorectal cancer surgery. Exercise confidence predicts exercise adherence in patients after colorectal cancer surgery. However, The association between simple

tests of functional capacity on exercise confidence are not known. To evaluate the association between a single 6-min walk test (6MWT) and exercise confidence in patients after colorectal cancer surgery.

**Methodology or Methods:** Observational study enrolling patients after colorectal cancer surgery who completed an Exercise Confidence Survey at baseline and following the 6MWT. Paired t-test was used to compare repeated-measures data, while Repeated Measures Analysis of Covariance was used for multivariate analysis.

**Impact on practice or Results:** 106 patients after colorectal cancer surgery were enrolled in the study (males, 62%; mean age,  $64 \pm 12$  years). Baseline Exercise Confidence was inversely associated with age ( $p < 0.01$ ), and depression ( $p < 0.001$ ). The 6MWT was associated with an improvement in Exercise Confidence ( $F(1,92) = 5.0$ ,

$P = 0.03$ ) after adjustment for age, gender, and depression.

**Discussion or Conclusions:** The 6MWT is associated with improved exercise confidence in patients after colorectal cancer surgery. Nurse could practice 6-minute walk test for patients after colorectal cancer surgery to improve patients' exercise confidence.

## K. IMPLEMENTATION SCIENCE/KNOWLEDGE TRANSLATION

### 561 | Does the Distress Assessment and Response Tool (DART) Save Lives? Evaluating the Impact of DART on Cancer-related Survival at the Princess Margaret Cancer Center

*Bryan Gascon<sup>1</sup>, Yvonne Leung<sup>2,3</sup>, Osvaldo Espin-Garcia<sup>4</sup>, Gary Rodin<sup>1,3</sup>, Madeline Li<sup>1,3</sup>*

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**Background/rationale or Objectives/purpose:** Symptom management is an integral component of cancer care, but evidence demonstrating clinical benefits of symptom screening is limited. The Distress Assessment and Response Tool (DART) at the Princess Margaret Cancer Centre (PM) integrates electronic symptom screening with triaged interprofessional clinical assessment. DART has been administered routinely in all clinics at PM since 2010. The impacts of DART on clinician response and cancer-related survival were evaluated.

**Methodology or Methods:** The study population consisted of cancer patients who attended PM between 2010–2014. Data on clinician response to DART-identified symptoms, sociodemographic, medical, and cause-of-death were extracted from hospital and provincial cancer registries. Propensity for DART completion, accounting for age, sex, marital status, income, cancer type and stage, were incorporated into inverse probability treatment weighting (IPTW) analyses to estimate the effect of DART completion on overall cancer-related survival.

**Impact on practice or Results:** A total of 1,329 charts were reviewed for randomly selected patients who scored  $\geq 4$  on select physical and emotional DART symptoms between 2011–2014. Pooled clinician assessment and intervention rates were 65% and 48%, respectively. Over the study period, 43% ( $n = 20,792$ ) of patients completed DART at least once. Over the same period, there were 13,142 cancer-related deaths amongst all PM patients. After propensity score analysis, DART non-completion was associated with lower cancer-related survival (HR 4.0; 95% CI 3.9–4.1) than those who completed DART.

**Discussion or Conclusions:** DART completion was associated with better overall survival in a large heterogeneous cohort of cancer patients. Further exploration is required to determine the contribution of clinician response rates to the potential mechanisms underlying this association.

### 656 | Development and piloting of a patient centered, risk-stratified supportive care clinical pathway for Head & Neck cancer patients in a Chilean cancer center

*Loreto Fernandez Gonzalez<sup>1</sup>, Loreto Moreira<sup>2</sup>, Cesar Casanova<sup>2,3</sup>, Piero Bettoli<sup>2</sup>*

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<sup>3</sup>*Universidad Mayor, Santiago, Chile*

**Background/rationale or Objectives/purpose:** Unmet supportive care needs for head and neck cancer (HNC) patients are well documented. Clinical pathways (CP) intend to standardize personalized multidisciplinary care, optimize resources, and ensure continuity of care. We developed and piloted a HNC-CP, focused on high-risk patients early identification for supportive care.

**Methodology or Methods:** CP was designed as a quality improvement initiative in a private non-profit cancer center in Santiago, Chile. Process included 1) literature review 2) assessment of patients records to identify supportive care needs 3) development of a risk profile according to treatment plan and impact on QoL 4) institutional resources assessment. Piloting began on October 2017. Implementation evaluation was conducted following Proctor et al. in July 2018.

**Impact on practice or Results:** CP consists on a single-visit comprehensive assessment (CA) by psychologist, nutrition specialist and speech-language pathologist. All patients should have at least a pre and posttreatment CA. High-risk profile was defined as combination of nutritional/functional low status, socioeconomic vulnerability and multimodal treatment. High-risk patients are followed up during and after treatment. The CP was piloted with 33 patients. 33% had severe malnutrition at first CA, 24% presented significant psychosocial and economic stressors. 21% met high-risk criteria. Regarding implementation, acceptability and appropriateness were high, with disparate physicians' adoption, along with institutional barriers for joint multidisciplinary assessment.

**Discussion or Conclusions:** CP is a useful device for identifying and managing high-risk HNC patients in a developing country. Patients deal with needs and toxicities requiring ongoing supportive care. Despite high acceptability and appropriateness, HNC supportive care faces implementation difficulties related to physician referrals and institutional barriers.

### 536 | How to do PROs in cancer care? - Tailoring process of implementation strategies for PRO assessments in cancer routine care

*Mirja Gianna Goerlach, Theresa Schrage, Holger Schulz, Christiane Bleich*

*University Medical Centre Hamburg-Eppendorf, Hamburg, Germany*

**Background/rationale or Objectives/purpose:** The successful implementation of patient-reported outcomes (PROs) in clinical routine faces many challenges, first and foremost the lack of consideration thereof in the patient care process. The aim of this study is to design suitable implementation strategies for improving the effectiveness of PRO assessment in inpatient and outpatient cancer routine care.

**Methodology or Methods:** Interviews with oncological patients (N = 28) and medical staff (N = 4) as well as focus groups with medical staff (N = 18) across five different oncological clinics were conducted. On the basis of these, qualitative content analysis revealed relevant barriers and facilitators for implementation of PROs in cancer care. These were subsequently presented in an expert discussion culminating in the development of strategies and a model of implementation following the principles of the Medical Research Council and the RE-AIM Framework.

**Impact on practice or Results:** Four PRO implementation strategies were developed to fit the demands of the five different oncological clinics.

Those were: 1) a concise questionnaire, 2) electronic input into a software with direct interface to patients' records, 3) software and process training for medical staff and 4) guidance on pathways for further care.

**Discussion or Conclusions:** Key to improving the effectiveness of PRO assessment in the time-critical clinical environment is the utilization of easy-to-use, electronic PRO questionnaires directly linked to patients' records thereby improving consideration of PROs in patient care. In order to validate the effectiveness of this implementation process further, an evaluation of implementation following a stepped wedge design will be conducted.

### 395 | Using Survivorship Care Plans as a Transition Tool from the Cancer Centre to Primary Care

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**Background/rationale or Objectives/purpose:** Survivorship Care Plans (SCPs) are intended as a tool for cancer survivors and primary care providers (PCPs) to facilitate survivors' transition from active cancer treatment to follow-up in primary care. Barriers to the uptake of SCPs in real-world settings may contribute to the mixed research findings on the outcomes of SCP use. The objectives of this study are to: a) identify barriers and enablers perceived to influence SCP use among cancer survivors and PCPs in urban, rural, and remote settings; and b) develop recommendations for addressing identified barriers and maximizing enablers to SCP use.

**Methodology or Methods:** We aim to recruit forty PCPs and cancer survivors to participate in semi-structured interviews developed using the Theoretical Domains Framework (TDF) to systematically identify barriers and enablers to SCP use. Participants will be recruited through the Wellness Beyond Cancer Program at The Ottawa Hospital, Canada. Content and thematic analysis will be conducted. The results will be used to develop recommendations for implementing SCPs into practice.

**Impact on practice or Results:** Coordinating follow-up care between cancer specialists and PCPs is important for ensuring that cancer survivors receive adequate follow-up care. While SCPs are recommended to facilitate this transition, guidance on the optimal use of SCPs in practice is needed.

**Discussion or Conclusions:** Preliminary results will be presented. Overall, developing recommendations for implementing SCPs in diverse settings is important for evaluating the impact of SCPs on patient outcomes. Adequate evaluation will then help decision makers determine if benefits gained from SCPs justify the additional time and resources required.

### 328 | What Canadian Association of Psychosocial Oncology (CAPO) members want from the Research Advisory Committee? A survey of members' research needs and priorities

*Sophie Lebel*

*University of Ottawa, Ottawa, Canada*

**Background/rationale or Objectives/purpose:** Objectives: The Canadian Association of Psychosocial Oncology (CAPO) seeks to foster interdisciplinary excellence in psychosocial oncology research, education and clinical practice. The CAPO Research Advisory Committee specifically works to support excellence in psychosocial oncology research by encouraging research in diverse areas. To guide its future



efforts, the Research Advisory Committee is documenting the current research needs of CAPO members and their perspectives on the Committee's main responsibilities.

**Methodology or Methods:** Methods: Current and past CAPO members will be asked to complete a brief online survey in May 2019 via personalized emails, the CAPO weekly newsletter, and the CAPO web-site. In addition to descriptive information about their professional roles and current involvement in research, members will be asked about: a) the kinds of training they need to support their research efforts, b) the best medium to receive this support, c) responsibilities of the CAPO Research Advisory Committee towards CAPO members, and d) whether they support the creation of a national Psychosocial Oncology Research Network to facilitate multi-centre studies and collaborations. Data will be analyzed using content analysis and descriptive statistics.

**Impact on practice or Results:** Results: Final survey results will be presented at the annual meeting.

**Discussion or Conclusions:** Conclusion and clinical implications: The results of this survey will inform CAPO and other Psychosocial Oncology Societies about ways they can meet the needs of their members. In the context of an increasingly competitive research environment, research committees play an important role in supporting the efforts of their members and building the evidence-base for practice.

## 96 | Implementation & Upscaling: Enhancing national implementation of evidence-based innovations to improve quality of life of cancer patients in the Netherlands

*Chantal Lammens, Vanessa Bouwman, Myrle Stouten*  
Netherlands Comprehensive Cancer Organisation, Utrecht, Netherlands

**Background/rationale or Objectives/purpose:** Too many evidence-based interventions (EBI's) have been developed in the field of psycho-oncology of which the availability doesn't reach beyond the research phase and site. EBI's are not automatically adopted and implemented, let alone available on a nationwide level. A diversity of barriers and enablers can be defined. Implementation and upscaling is often seen as the responsibility 'of the field', but what is practically needed, how to arrange this on a structural basis and who can be held accountable?

**Methodology or Methods:** Starting with a proof of principle, five diverse EBI's were selected. Tailor-made nationwide implementation plans were developed, carried out and monitored. With lessons learned from this proof of principle, an 'Upscaling guide' is developed. This guide can be used for current and yet to develop EBI's, to optimize their upscaling process and enhancing nationwide implementation/upscaling and availability in the Netherlands

**Impact on practice or Results:** The upscaling guide, includes an 'upscaling-model' and pre-conditions for upscaling, such as reimbursement, education of (end)users, time, disentangle intervention and research. These pre-conditions need to be addressed to enhance successful upscaling of EBI's in the field of psycho-oncology in the Netherlands.

**Discussion or Conclusions:** Important lessons learned from this proof of principle is that successful implementation/upscaling of an EBI starts before the intervention itself is (fully) developed. It takes co-creation and teamwork from the start, in which it is essential to bring people with different areas of expertise together: expertise in (mental) healthcare, research, but also regarding reimbursement and (local and/or national) law & regulations. Upscaling takes time, tenacity and continuity. Those who are able to build a network, can go further

## 95 | 'Psychosocial training and research needs in oncology health care professionals working in hospitals.'

*Veronique Gerits<sup>1</sup>, Ellen Daly<sup>1</sup>, Angelique Verzelen<sup>1</sup>, Sabien Bauwens<sup>1,2</sup>, Eva Jacobs<sup>1,3</sup>, Wim Distelmans<sup>2,1</sup>, Lieve Vanderlinden<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** The Cédric Hèle institute (CHi) - Flemish institute of Psychosocial Oncology - conducted an exploratory research to gain insight in (1) the needs and bottlenecks experienced by oncology health care professionals concerning education in psychosocial oncology; (2) relevant research themes in psychosocial oncology; (3) the needs and bottlenecks experienced by oncology health care professionals concerning the implementation of scientific research and (4) how to bridge the gap between research and clinical practice.

**Methodology or Methods:** CHi performed an online questionnaire that was sent by e-mail to all members of the online CHi- community working in hospitals. 1045 e-mails were sent with a 19% (n = 201) response rate. The questionnaire consisted of 3 parts. Training and research needs were explored in part one and two. Professional data were collected in part 3. Each part of the questionnaire consisted of open and closed questions.

The results of the closed questions will be analysed and presented in pie and bar charts. For the qualitative data, thematic analysis will be used to draw conclusions.

**Impact on practice or Results:** The data collection was completed in February 2019. Results will be available by June 2019.

**Discussion or Conclusions:** CHi will use the results of this study to keep their current training offer up to date and adapted to the needs of oncology health care professionals.

The insights of this study will lead to a better knowledge and implementation of good practices in order to continue to bridge the gap between psychosocial oncology research and clinical practice in hospital settings.

## L. PALLIATIVE CARE

### 742 | Dying with Dignity in final days-Patients and Family members preferences

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**Background/rationale or Objectives/purpose:** As comfort measures intensify, so should the support provided to the dying patient's family. After the patient's death, palliative care focuses primarily on bereavement and support of the family. Lack of effective, patient- family communication can increase the psycho social distress leading to poor Quality of death, where the dying patients' true feelings, concerns and needs (Psycho-Social-Spiritual) are unaddressed. To develop a study which purports a meaningful conversation for terminal ill cancer patients and their family members, to squeeze out the final drops of life like their medical preferences, medical choices, desires and patients favorite place to spend their final days that will adhere to the rights of the patient to painless death. This study will be a torch bearer in Indian health care system that contributes to formulate common guidelines among all health care system to promote dignity among dying patients

**Methodology or Methods:** A convergent parallel mixed methods design involving both Qualitative and Quantitative methods. Patient Dignity inventory (PDI) chochinov et al 2005 is used to measure the level of dignity of patient. Qualitative Data were analyzed using content analysis and Quantitative analysis are analyzed using appropriate statistical packages. A total of 60 palliative care patients and their care takers were recruited from five inpatient palliative care units in five districts of Tamil Nadu including both urban and rural patients from Chennai, Pondicherry, Tiruvarur, Trichy and Madurai.

**Impact on practice or Results:** From the results of the study it is inferred that the level of dignity of patients dying in palliative care was found to be very poor. The Qualitative analysis results gave rise to some of the important emergent themes like enhanced respect of self in decision making, promotion of effective interaction about their needs, unfinished business and patient preferences of staying at home during death, promoting legacy and willingness to die without any life stabilizing devices.

**Discussion or Conclusions:** This study will help promote the importance of the concept of dignity among health care professionals, nurses and other workers in the field of palliative care who emphasise the importance of managing symptoms alone. The study also claims addressing psycho social and spiritual needs are equally important along with treating physical symptom. As the study discusses the aspects of death it is culturally sensitive.

## 724 | New Frontiers for AYA Oncology: Developing an Integrated AYA Clinic between Palliative Care and Psychiatry at Princess Margaret Cancer Centre

*Pamela Mosher<sup>1,2</sup>, Ahmed Al-Awamer<sup>1</sup>*

<sup>1</sup>Princess Margaret Cancer Centre, Toronto, Canada; <sup>2</sup>Sick Kids Hospital, Toronto, Canada

**Background/rationale or Objectives/purpose:** Identify AYA patients' unique palliative care needs.

Describe the challenges of integrating palliative care in the AYA population

Outline an approach to communicating with AYA about palliative care issues

**Background:** Early adolescence and young adulthood is a time of developing personal identity, relationships, careers and financial independence. Individuals in this age group may have limited exposure to adverse life experiences. Despite strong calls for early integration of palliative and psychosocial care in the Adolescent and Young Adult (AYA) cancer population, significant gaps still exist in the delivery of palliative and psychological care for this group. Little is known about AYA patients' end of life preferences or their psychological experiences while receiving palliative care. To address some of these unknowns, our interdisciplinary team developed a new integrated palliative and psychosocial clinic for AYA patients.

**Methodology or Methods:** Over 100 AYA patients and families have been assessed by an attending palliative care physician and a psychiatrist together in our new clinic. Trainees from multiple disciplines rotate in the clinic. We have identified important AYA clinical needs, interventions, and barriers to care.

**Impact on practice or Results:** Early access to consolidated palliative and psychosocial care is helpful for patients, families and oncology teams.

**Discussion or Conclusions:** We will present our experience in working with this complex patient population and several lessons learned. More research and clinical models are needed to provide integrated support to AYA's requiring palliative care. Using age-appropriate interventions and advance care planning tools may be helpful for palliative care clinicians to address AYA patients' needs.

## 692 | Palliative care transitions from acute care to community-based care: A systematic review

*Stephanie Saunders<sup>1</sup>, Tiegban Killackey<sup>2</sup>, Allison Kurabashi<sup>1</sup>, Chris Walsh<sup>3,4</sup>, Kirsten Wentland<sup>5,6</sup>, Sarina R Isenberg<sup>1,7</sup>*

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Department of Medicine, University of Toronto, Toronto, Canada; <sup>7</sup>Division of Palliative Care, Department of Family and Community Medicine, University of Toronto, Toronto, Canada

**Background/rationale or Objectives/purpose:** Transitioning from the hospital to the community is a vulnerable point in patients' care trajectories, yet little is known about this experience within the context of palliative care (PC). We conducted a systematic review to investigate whether receiving specialist PC interventions in-hospital impacted the transition to the community when compared to usual care.

**Methodology or Methods:** Searches were performed in 4 databases (Medline, EMBASE, Proquest, CINAHL). Four reviewers screened records using the following inclusion criteria: 1) peer-reviewed empirical study, 2) adult sample, 3) experimental or quasi-experimental study design, 4) receiving specialist PC in-hospital, and 5) assessment(s) of transition-based outcomes.

**Impact on practice or Results:** 1514 studies were identified and 9 met inclusion criteria. Studies were published recently (>2016; n = 7, 64%). Specialist PC interventions were delivered by multi-disciplinary care teams as part of inpatient PC triggers, discharge planning programs, and transitional care programs. In-hospital palliative care was associated with a decrease in hospital readmissions and an increased likelihood of discharge support for those who received inpatient PC. Most studies were at high risk of bias.

**Discussion or Conclusions:** Despite significant heterogeneity in study designs, receiving PC in-hospital appears to improve transitions for patients. In examining transition-based outcomes, studies predominantly reported on system-level outcomes. Few studies incorporated patient reported outcome measures or communication-based outcome measures. This narrow analysis denies the importance of patient perspectives and communication outcomes during this complex period of transitional care. Future research should aim to integrate a broad range of outcome measures when evaluating PC interventions in order to provide appropriate transitional care for the PC population.

## 664 | Effects of age and cannabis use on cancer-related symptoms in patients seeking specialized symptom management

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**Background/rationale or Objectives/purpose:** Despite increasing use of cannabis for cancer-related symptoms, few studies have examined its relationship to patients seeking specialized symptom management. Based on previously reported relationships between cannabis use and both younger age and more moderate to severe symptoms, we examined age-related differences in symptom severity in patients identified as cannabis users/non-users. We hypothesized that age (young adult/adult/older adult) would be negatively associated with symptom severity.

**Methodology or Methods:** Participants were 816 patients (mean age 55 years; range = 18–90) in active treatment who completed the Edmonton Symptom Assessment Scale-Revised-css and underwent urine drug testing for tetrahydrocannabinol (THC).

**Impact on practice or Results:** Approximately 30% tested THC-positive. In analysis of variance, there were significant ( $p < .05$ ) main effects for age (lack of appetite, shortness of breath) and cannabis use (lack of appetite, difficulty sleeping) and significant interactions between age and cannabis use (pain, anxiety, depression). Mean comparisons showed shortness of breath was worse in adults and older adults and lack of appetite was worse in older adults; difficulty sleeping and lack of appetite were worse in cannabis users; pain was worse in young adult and adult cannabis users, and anxiety and depression were worse in adult cannabis users. In mediational analysis, the relationship between age and difficulty sleeping, but not between age and lack of appetite, shortness of breath, or spiritual well-being, was mediated by cannabis use.

**Discussion or Conclusions:** Findings suggest age-related differences in difficulty sleeping in this population. This difference can be explained by the relationship of cannabis use to younger age and greater difficulty sleeping.

### 630 | Experiential avoidance in advanced cancer: patients' and therapists' perspectives

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**Background/rationale or Objectives/purpose:** To explore whether patients with advanced cancer who received ACT engaged in experiential avoidance; why did they engage in this behaviour; were therapists able to address the behaviour using ACT.

**Methodology or Methods:** Qualitative interviews were conducted with 9 patients who received ACT. 2 dyadic interviews were conducted with 2 ACT therapists. Interviews were transcribed verbatim and a thematic analysis was conducted. Data from both groups of interviews were triangulated.

**Impact on practice or Results:** Key themes were identified: Patients engaged in a number of avoidance behaviours. Worry, anxiety and rumination prevented people from carrying out normal activities because of the fear of pain or fatigue. Some avoided social contact, as they did not want to talk to people, so remained at home. People avoided talking to their families about their emotions surrounding their illness, because they felt guilty and anxious and did not want to upset them. They had difficulties expressing their own needs.

To enable patients to fully engage in therapy, therapists had to allow them time to relate their personal narratives/ stories surrounding their illness. Therapists got patients to accept their experiences by getting them to focus on what's important to them (i.e. their values) and to behave accordingly. Some patients were resistant and couldn't accept their experiences due to entrenched behaviours, and continued to take steps to avoid them.

**Discussion or Conclusions:** Experiential avoidance was common amongst patients and caused a lot of distress. Therapists had to modify the language they used and regularly repeat information about ACT processes to enable patients to change behaviours.

### 618 | Life-sustaining Treatments Withdrawal in Keelung Chang Gung Memorial Hospital: Death with Dignity

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**Background/rationale or Objectives/purpose:** Background:

Taiwan's hospice palliative care act was promulgated in year 2000. The act had been further amended for three revisions in the past decade. The 2011 amendment defined the situations that life-sustaining treatments (LST) may be terminated or withdrawn in patients with terminal illness. We report the practice of LST in 2015 ~2017.

**Methodology or Methods:** Methodology: KCGMH is a critical hospital for traumatic, critical and cancer patients in the northeast corner of Taiwan. 78 patients received LST withdrawal. We retrospectively collected the information about the hospice course.

**Impact on practice or Results:** Impact on practice for your abstract:

The patients were 50 males and 26 females. The age ranged 11~ 94. The most common causes of end-of-life of LST withdrawal are cancer (29), brain diseases (23), and kidney diseases (9). Accidents account for 9.2% of withdrawals, with 2 trauma and 5 OHCA. Most of patients received LST withdrawals were at intensive care units. Five were with-

drawn in ordinary wards, with 2, 0, and 3 in respective year. Most of patients died within 3 days of withdrawal, except 1 cancer female 17 days, 1 cerebrovascular accident (CVA) male 8 days, and another CVA male 197 days. Palliative care team (PCT) visited patients or family at least once, before LST withdrawal.

**Discussion or Conclusions:** Discussion:

As palliative care system had been set up, death with dignity was not a dream by the bridging of our PCT. Taiwan initiated "patient right to autonomy act" in 2019. We hope to see that LST withdrawal could be applicable to more terminal situations by patients' advance directive.

### 610 | The Pathway to Spiritual Healing: Social Workers' Roles in Palliative Care in Taiwan

*Ling Yeh, Pei-Shan Yang, Ping-Chuan Hsiung*

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**Background/rationale or Objectives/purpose:** The nature of interdisciplinary palliative care can make professionals lose sights of their unique contributions in the team. This study aims to contribute to literature with clinical evidence of the unique social work roles in the palliative care team.

**Methodology or Methods:** With purposive sampling and snowballing, four experienced social workers in palliative care in Taiwan were interviewed using a semi-structured interview guide. Their average work experience was 19 years and 1 month (ranged from 5 to 27 years). Interviews were recorded and transcribed verbatim to maintain data integrity, and critical discussions were routinely held among research team members to reduce perceptual bias. Open coding procedure and thematic analysis was then performed.

**Impact on practice or Results:** This study proved that social workers are key to spiritual healing of cancer patients. Four sub-roles were identified: (1) to facilitate the patient-centered holistic care as social workers applied life-review to locate patients' inner strengths and to reach for spiritual peace; (2) to broaden conversations of symptom-management to dialogues on patients' individual concerns and suffering with the aim to enhance patients' personal efficacy; (3) to engage patients and families to communicate openly and re-align roles in family functioning; (4) to open up future-oriented death and dying conversations and planning for patients through the use-of-self of social workers.

**Discussion or Conclusions:** It is suggested that clinical training should emphasize more on how social workers may use their selves to obtain optimal care. The four roles can also be used in in-service training to facilitate inter- and intra-disciplinary conversations in maximizing the interdisciplinary collaborations in palliative care.

### 598 | The influence of traditional Chinese culture on the meaning of dignity in advanced cancer patients in Mainland China

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**Background/rationale or Objectives/purpose:** To examine the meaning of dying with dignity in traditional Chinese culture, and explore generalisability of the Dignity Model to advanced cancer patients in Mainland China.

**Methodology or Methods:** Data were collected using literature review and interviews with 20 advanced cancer patients who were recruited from a tertiary hospital in Northern China. Review of literature and interviews were carried out concurrently, followed by synthesis of the findings. Framework analysis with both deductive and inductive methods was used based on the Chochinov Dignity Model.

**Impact on practice or Results:** Major categories of themes of the Dignity Model were supported under traditional Chinese culture. However, symptom distress, role preservation, autonomy, and living "in the moment" manifested contrary meanings in traditional Chinese culture, which



respectively speaks to endurance of suffering, maintenance of collective roles rather than individual roles, decision making by family members according to “doing the good” intention, and preparation for the future instead of living “in the moment”. Subthemes, including cognitive acuity, continuity of self and maintenance of pride were not sufficiently supported. While three new subthemes emerged, including family connectedness, stigma, and financial concerns.

**Discussion or Conclusions:** The meaning of dying with dignity is culturally bound and understood differently in traditional Chinese culture. The influence of culture on the meaning of dying with dignity requires respect for individual patient’s cultural beliefs in clinical practice. Modifications should be made to dignity therapy to ensure that it is culturally appropriate before applying it to Chinese patients.

### 586 | Pilot study on improvement in the perception of dignity through the TIME Questionnaire in palliative care of the Hospital Group QUIRÓN-SALUD

*Esther Martín Molpeceres<sup>1</sup>, Laura Edith Guerrero Gutiérrez<sup>2</sup>, Javier Monsalvo Saornil<sup>3</sup>, Arancha Esteban Gutiérrez<sup>4</sup>, Nuria Ruiz Gómez<sup>1</sup>, María Herrera Abián<sup>3</sup>, Eduardo García Romo<sup>1</sup>, David Rudilla García<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** TIME, a tool aimed at improving the perception of the dignity of patients. Consider the dignity of the person associated with feeling heard and understood. In line with humanizing health, it is proposed to apply it in Palliative Care Units (PCU) of the Hospital Group QUIRÓN-SALUD.

Use the TIME Questionnaire at the patient’s entrance for an optimal therapeutic link, favoring the perception of dignity and reducing stress.

**Methodology or Methods:** Experimental study Translation-counter-translation of the Time questionnaire was carried out by 2 bilinguals, EORTC-criteria. Sample of 34 patients (Age MD = 66.50, SD = 12.40, 12 men, 22 women), randomly distributed in 2 groups: TIME & Standard. It was administered: distress thermometer and Dignity Evaluation Questionnaire (CED-PAL), day 1 and 5 in both groups. The TIME-group was passed to the TIME-group at the beginning, after the pre measurements. Results obtained with SPSS, calculating descriptive statistics, t tests of related samples and effect size (Cohen’s d).

**Impact on practice or Results:** TIME-GROUP: Distress  $t(17) = 3.930$ ;  $p = .001$ ; Size effect  $r(.32)$ ;  $d(.69)$  Dignity-Preservation  $t(16) = -7.984$ ;  $pSize$  effect  $r(.68)$ ;  $d(1.87)$  Dignity-Threat  $t(16) = -5.035$ ;  $pSize$  effect  $r(.36)$ ;  $d(.79)$  Dignity-perception  $t(16) = -10.570$ ;  $pSize$  effect  $r(.62)$ ;  $d(1.60)$

STANDARD-GROUP: Distress  $t(14) = 4.250$ ;  $p = .001$ ; Size effect  $r(.12)$ ;  $d(.36)$  Dignity-Preservation  $t(14) = -1.023$ ;  $p = .324$ ; Size effect  $r(.14)$ ;  $d(.29)$  Dignity-Threat  $t(13) = -2.649$ ;  $p = .020$ ; Size effect  $r(.36)$ ;  $d(.78)$  Dignity-perception  $t(13) = -3.713$ ;  $p = .003$ ; Size effect  $r(.33)$ ;  $d(.72)$

**Discussion or Conclusions:** The treatment with TIME improves the perception of dignity in palliative patients, although the standard treatment obtains good results

### 585 | Taking care of caregivers: Workshop for caregivers of palliative patients at home. A joint vision of nursing and psychology. Pilot Study

*Javier Monsalvo Saornil<sup>1,2</sup>, Ana Belén Hernández Rubio<sup>2</sup>, Esther Martín Molpeceres<sup>1</sup>, María Herrera Abián<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** Informal/family caregivers are a fundamental source of care for palliative patients. It considers the importance of the multidisciplinary team combining nursing and

psychological techniques in providing a “person-centered” therapy model. Our proposal is to create a caregiver support group(CSG) focused on the detection of the most common circumstances of caregivers at home in order to improve the management of aspects regarding health and patient- caregiver relationships.

**Methodology or Methods:** This pilot study reviews current results presented in a 2–4 CSG meeting convened by nurses and psychologist specialized in palliative care.

The meeting sought to examine the state of the science of caregivers, identify the requirements found in health and psychological aspects to promote personalized attention within CSG, provide counseling techniques and support to cope with non-physical symptoms and to improve the communication with palliative patients.

**Impact on practice or Results:** 23 caregivers attended 4 CSG meeting. 87% (N = 20) completed a feedback questionnaire. Results showed a high level of satisfaction and a decrease on the unnecessary patients admission in the hospital.

The most common treated themes were 1) Isolation perceived by the caregivers at home. 2) The end of life decisions. 3) Communication between the family and healthcare system.

**Discussion or Conclusions:** Most accurate ways to measure topics treated in CSG meetings are required. We’re seeking feedback for future strategies that will be directed to maintain an ongoing relationship with palliative patient/family, in order to generate and test strategies to achieve the most effective, multidisciplinary and personalized intervention for the family caregivers in the end of life.

### 578 | Implementation of family-based dignity therapy in advanced cancer patients in Mainland China: a study protocol

*Qiaohong Guo<sup>1</sup>, Lili Ma<sup>1</sup>, Dongmei Chuang<sup>2</sup>, Libui Liu<sup>2</sup>, Haimei Geng<sup>2</sup>, Zhiqian Chen<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** To develop and evaluate culturally sensitive, family-based dignity therapy (FBDT) for patients with advanced cancer and their families in Mainland China.

**Methodology or Methods:** Mixed-methods design. In the first phase of the study, participants, including 20 advanced cancer patient-family dyads and 20 healthcare providers recruiting from a tertiary hospital, will be surveyed to evaluate the initial FBDT, which is developed based on the Chinese dignity model and by bringing in basic concepts and model of dignity therapy. The second phase will be a randomized controlled open-label trial. Eighty patient-family dyads will be randomly assigned to one of two groups: intervention group (FBDT and standard care) and control group (supportive interview and standard care). Both quantitative and qualitative outcomes will be assessed in face-to-face interviews at baseline, 1 day after and 2 weeks after intervention, as well as in phone interview with families at 1 month post bereavement. Data will be analyzed using qualitative and quantitative methods.

**Impact on practice or Results:** The initial FBDT will be revised based on participants feedback. The FBDT will be tested with advanced cancer patient-family dyads to examine its feasibility (recruitment and retention rates, details of FBDT implementation), acceptability (patient-family dyads satisfaction) and potential effectiveness (dignity, psychosocial and spiritual well-being, and quality of life for patients, grief experience and bereavement outcomes for family members, family communication and connectedness).

**Discussion or Conclusions:** The FBDT may be a feasible, acceptable and effective psychosocial intervention for Chinese patients with advanced cancer and their families. Findings of this study will contribute to advancement of palliative care practices in Mainland China.

### 556 | Development of a quality of life instrument for children with life-limiting cancer

*Josianne Avoine-Blondin<sup>1,2</sup>, Émilie Dumont<sup>1,2</sup>, Nago Humbert<sup>2</sup>, Marc-Antoine Marquis<sup>3</sup>, Michel Duval<sup>1,2</sup>, Serge Sultan<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** In pediatric palliative care (PPC), the ability of professionals to evaluate quality of life (QoL) is the key to make appropriate decisions about the care to provide to patients. However, there is not yet valid instrument for this population. Thus, it remains difficult for clinicians to assess the QoL of children in PPC. The present study aims to develop a tool to assess the QoL of this population in oncology.

**Methodology or Methods:** (1) Describe the main dimensions of QoL in PPC. In a previous study, we interviewed 20 professionals in oncology to identify dimensions of QoL. In the present study, we conducted semi-structured interviews with 7 children with advanced cancer and 10 parents to validate the adequacy of these dimensions. (2) Once the major QoL's dimensions have been described, we created a draft of the tool according to a simple vocabulary using by the participants themselves. Expert judges, including patient partners and professionals in PPC, reviewed this draft and rated items for relevance, understandability and sensitivity.

**Impact on practice or Results:** The results highlight 7 dimensions of QoL. These dimensions were included in the first draft of the tool, which has been modified to improve relevance and understandability according to the comment of expert judges.

**Discussion or Conclusions:** The next phase consists of conducting a psychometric evaluation of the tool with the target population. The final version of the tool should provide an opportunity for dialogue between caregiver and patient to help make therapeutic decisions based on the evolution of children's QoL over time.

### 553 | Quality of Life in pediatric palliative care in oncology: children and parents' perspective

*Josianne Avoine-Blondin<sup>1,2</sup>, Émilie Dumont<sup>1,2</sup>, Nago Humbert<sup>2</sup>, Marc-Antoine Marquis<sup>3</sup>, Michel Duval<sup>1,2</sup>, Serge Sultan<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** In pediatric palliative care (PPC), information regarding the quality of life (QoL) of a patient allows to prioritise problems and to adapt the care for children. Although there is a large body of scientific literature on the QoL of patients undergoing curative treatment and survivors, very little empirical data is available on the QoL of children with advanced cancer. A preliminary study with professionals who accompanied children with advanced cancer permitted to highlight dimensions of QoL as physical, psychological and social well-being and original dimensions such as pleasure and the present moment. However, to provide an accurate understanding of QoL, it is essential to gather the perspective of children and parents. The present study aims to describe the QoL in the context of PPC in oncology according to the representation of children and parents.

**Methodology or Methods:** Qualitative research design was selected. Semi-structured interviews were conducted with 7 children with advanced cancer and 10 parents' users of the hemato-oncology department. Interview data were analyzed using thematic analysis.

**Impact on practice or Results:** Children and parents confirmed the importance of all dimensions previously identified by professionals but reformulated them in a way more representative of their experience.

**Discussion or Conclusions:** Bringing together the perspectives of children, parents and professionals provides a more accurate definition of QoL in the context of PPC in oncology. Such clarification provides a framework of practice suitable for interdisciplinary communication

and helps to identify the useful criteria for the development of a QoL assessment in PPC.

### 543 | Journey of a patient with gallbladder cancer and bone metastases on initial diagnosis-- Junior doctors' perspective on the learning of end-of-life care

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**Background/rationale or Objectives/purpose:** Modern medical education, comprising six core competences, has been introduced to Taiwan after 2000. Together with psycho-oncology, that remodeled the young doctors' learning through patients with rare and far advanced cancers.

**Methodology or Methods:** Beginning from case-based discussion, the juniors presented a 63 year-old male with gallbladder cancer (GBC) with peritoneal and diffuse bone metastases. Symptomatic bone metastases are rarely found on initial diagnosis of GBC. Narrative medicine led us the way to the patient's story, not only disease itself. Training of communication skills shed the light on the sensitive side of the beings. As a patient with terminal illness, his tumor had been stable for 3 months, became refractory to first line chemotherapy soon. He attempted a new immunotherapeutic agent called pembrolizumab, and failed. Pain control, symptom relief and prediction of palliative prognosis turned to be the major medical issues.

**Impact on practice or Results:** Incorporating psycho-oncology (PO) into medical education does not become learning burden, but fits the model of patient-centered care. We learned psycho-social aspects of the patient, feeling his emotion, family's changing life, and their grief. We also studied the role of conventional chemotherapy of gemcitabine/cisplatin and the limitation of immunotherapy of checkpoint inhibitor. By the way, we are familiar with comprehensive care of cancer patients.

**Discussion or Conclusions:** PO should be an important part of oncology training, for both seniors and juniors. For we juniors, PO means holistic care rather than psychotherapy alone. Palliative medicine for juniors might consist of communication skills training, narrative medicine, symptom control, and prediction of palliative prognosis.

### 542 | More than prescribing bathroom equipment: The role of occupational therapy in addressing psychosocial concerns at end of life

*Julie Brose*

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**Background/rationale or Objectives/purpose:** This presentation will outline the valuable role the occupational therapist plays on the palliative care team. Historically, referrals to occupational therapists have been limited in palliative care services, often restricted to equipment prescription and assessment of physical function in order to engage in activities of daily living. Occupational therapists are trained to address the whole person, including the psychosocial, cognitive, physical, and environmental aspects of the individual and their support system.

**Methodology or Methods:** The Model of Human Occupation (MOHO) will be used to outline the role of occupational therapists in addressing priorities of people receiving palliative care services. People living with advanced cancer want to continue engaging in everyday life and relationships, and the MOHO provides a framework to address the motivation and meaning behind engagement in everyday activities in order to maintain one's identity and quality of life whilst experiencing functional decline.

**Impact on practice or Results:** Awareness of the role and involvement of occupational therapists on palliative care teams can improve quality

of life for people living with advanced cancer. Occupational therapists address the constant changes in everyday life and relationships as cancer progresses, assisting people living with advanced cancer to adapt to continual losses and maintain their sense of self.

**Discussion or Conclusions:** The Model of Human Occupation guides occupational therapy practice, addressing the roles, values, interests and habits of people living with advanced cancer, as well as their physical, cognitive and psychosocial abilities and environment. Considering the important role of occupational therapists, further research is required regarding the longitudinal experience of engagement in everyday life.

### 518 | Psychosocial Representation in Canadian Palliative Care

*Maggie Robinson<sup>1</sup>, Maryam Queresht<sup>2</sup>, Aynharan Sinnarajah<sup>3,2</sup>, Srin Chary<sup>2,3</sup>, Janet de Groot<sup>2,4</sup>, Andrea Feldstain<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** Canada is an international leader in palliative care (PC), a subspecialty of medicine aiming to alleviate suffering and promote quality-of-life. PC acknowledges that interdisciplinary intervention is integral, recognizing the impact of psychological, social, spiritual sources of suffering. We became interested in the state of current integrated practice, considering the evolution of PC, psychosocial oncology, and Canadian Health care overall. Our focus herein is to describe the current representation of psychosocial care within Canadian PC.

**Methodology or Methods:** We recruited 14 participants who completed an 11-item questionnaire about their local PC. We recruited departmental directors across PC programs in Canadian hospitals and universities (n = 13) and members of the Canadian Society for PC Physicians (n = 1). Descriptive statistics and frequencies were used to describe reported psychosocial support.

**Impact on practice or Results:** Participants were from BC (n = 2), AB (n = 2), ON (n = 5), QC (n = 2), NB (n = 1), NS (n = 2). Notable gaps in service were noted in main psychosocial supports. Reports indicated that social work was available (n = 7), underrepresented (n = 4), or missing (n = 1). Psychology was mentioned as either underrepresented (n = 2), missing (n = 2), or outside consults necessary (n = 1). Spiritual care/Chaplain was noted as available (n = 1), underrepresented (n = 1), and missing (n = 1). Psychiatry was mentioned once as underrepresented (n = 1).

**Discussion or Conclusions:** Social work is most frequently available in PC programs. Other sources of psychosocial care are frequently under represented or lacking. We will discuss potential contributing factors and implications on patient care, team function, and availability of interventions.

### 506 | EXPRESSIONS OF SPIRITUALITY IN FAMILY CAREGIVERS OF ADVANCED CANCER PATIENTS IN BRAZILIAN HOSPITALS

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*Faculty of Philosophy, Sciences and Letters of Ribeirão Preto at*  
*University of São Paulo, Ribeirão Preto, São Paulo, Brazil*

**Background/rationale or Objectives/purpose:** Studies have highlighted the importance of spirituality and its existential aspects as essential supporting components for people dealing with serious illnesses. However, a few studies have investigated specifically the experiences and needs of family caregivers facing the imminent death of a loved one with cancer and their existential suffering. This study aims to investigate the expressions of spirituality in family caregivers of advanced cancer patients during end-of-life care in two hospitals in Brazil.

**Methodology or Methods:** This is a qualitative study, based on the phenomenological approach. Individual interviews were audio recorded and transcribed. The research was composed by sociodemographic data and field notes.

**Impact on practice or Results:** Participants were 16 family caregivers, aged 20 to 77, composed by sons, daughters, spouses, sister and nieces who accompanied the advanced cancer patient considered without possibilities of a cure in two hospitals (general and cancer centre) in Brazil. Through the phenomenological analysis the meaning units were unveiled: the resignification of existence and the meaning of life; the caregiving experience; spirituality as support and strengthening in the face of impending death; existential and spiritual distress.

**Discussion or Conclusions:** It was highlighted the importance of understanding the different expressions of spirituality in family caregivers of advanced cancer patients also considering the existential aspects. With the continuity of this study and follow-up of the mourning process of the family caregivers, it is hoped to improve end-of-life and bereavement care for family caregivers of advanced cancer patients in the Brazilian scenario.

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### 479 | Feasibility of a Cognitive-Behavioral and Environmental Intervention for Sleep-Wake Difficulties in Community-Dwelling Cancer Patients Receiving Palliative Care

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**Background/rationale or Objectives/purpose:** High rates of sleep-wake difficulties have been found in patients with cancer receiving palliative care. Pharmacotherapy is the most frequently used treatment option to manage these difficulties despite numerous side effects and the absence of empirical evidence of its efficacy and innocuity in palliative care. This pilot study aimed to assess the feasibility and acceptability of a cognitive-behavioral and environmental intervention (CBT-E) to improve insomnia and hypersomnolence in patients with a poor functioning level, and to collect preliminary data on its effects.

**Methodology or Methods:** Six patients with cancer receiving palliative care (ECOG 2-3), who had insomnia and/or hypersomnolence (disorder or subsyndromal symptoms), received one CBT-E individual session at home. They applied the strategies for three weeks. Patients completed the Insomnia Severity Index, the Epworth Sleepiness Scale, a daily sleep diary and a 24-hour actigraphic recording (7 days) at pre- and posttreatment, in addition to a semi-structured interview (posttreatment).

**Impact on practice or Results:** Participants found strategies easy to apply most of the time and none was rated as impossible to use because of their health condition. However, their adherence and satisfaction toward CBT-E were highly variable. Results on the effects of CBT-E were heterogeneous, but improvements were observed in patients with a persistent insomnia disorder.

**Discussion or Conclusions:** The CBT-E protocol tested among this highly-selected sample was fairly well-received and suggested positive outcomes in some patients, particularly those with an insomnia complaint alone. Efforts should be pursued to adapt CBT-E and develop other non-pharmacological interventions, in order to provide an alternative to pharmacotherapy for sleep-wake difficulties in this population.

### 476 | Experiences and needs of patients with incurable cancer regarding advance care planning: results from a national cross-sectional survey

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**Background/rationale or Objectives/purpose:** Patients faced with incurable cancer may feel abandoned or experience a lack of support from their clinician. However, studies on cancer patients' preferences and experiences regarding the conversation, in which they learn there are no further curative treatment options, and advance care planning are scarce. We therefore aimed to explore the needs and experiences of Dutch patients with incurable cancer regarding this conversation and the level and quality of advance care planning.

**Methodology or Methods:** We performed a cross-sectional study among patients diagnosed with incurable cancer. Data were collected through a national online survey in the Netherlands. Descriptive analyses were performed and Pearson correlation coefficients were calculated.

**Impact on practice or Results:** In total, the survey was completed by 654 patients with incurable cancer. Mean age of the participants was 60 years, 58% was female, and patients were mainly diagnosed with breast cancer (22%), haematological cancer (21%) and prostate cancer (19%). Overall, these patients reported a strong need (score 8.3) for emotional support during the conversation, in which they were informed about the transition from curative treatment to palliative care. However, satisfaction with emotional support was low (score 6.4). Most patients preferred the conversation to be initiated by their health care provider (e.g., the treating clinician). The largest discrepancies between offered and needed support during patients' last phase of life were related to psychosocial issues.

**Discussion or Conclusions:** Healthcare for patients with incurable cancer can possibly be improved by tailoring conversations, about the transition from curative treatment to palliative care, and advance care planning more to the needs of patients.

#### 456 | Impact of Circumstances at End-of-Life on the Adjustment of Bereaved Siblings of Children Who Died from Cancer

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**Background/rationale or Objectives/purpose:** To examine the impact of end-of-life (EoL) circumstances on grief and internalizing symptoms among bereaved siblings.

**Methodology or Methods:** Bereaved families (N = 84) were recruited from four sites 3-12 months after their child's death from cancer (M = 11.57 months). Eligible siblings were 8-17 years old. Families completed home assessments of grief (Hogan Inventory of Bereavement) and internalizing symptoms (CBCL).

**Impact on practice or Results:** Ninety percent of mothers (n = 75) anticipated their child's death (M = 81.04 ± 135.88 days). Most siblings (78%, n = 65) were aware their brother/sister was dying, primarily informed by parents (70%, n = 49). Half of deaths took place at home (52%, n = 43), with the remaining in the hospital (43%, n = 36) or other location (5%, n = 4). Thirty-five percent (n = 29) of siblings were present at death, 33% (n =

27) nearby, or 35% (n = 27) not present. Forty percent of siblings and 15% of mothers did not say goodbye (n = 33; n = 12, respectively).

Mother-reports of sibling internalizing symptoms were significantly above the normative mean  $t(83) = 4.44, p < .001$  (M = 56.01 ± 12.48), with 39% (n = 33) in the borderline/clinical range. Most circumstances surrounding death were unrelated to siblings' internalizing and grief outcomes, except home death and sibling growth ( $r = -.22, p = .047$ ). Siblings also had elevated internalizing symptoms if their parent did not say goodbye,  $F(2,79) = 4.08, p = .021$ ; M = 65.5 ± 12.58).

**Discussion or Conclusions:** A significant portion of bereaved siblings had elevated internalizing symptoms irrespective of circumstances at EoL. Place of death and saying goodbye may be important for sibling adjustment. Further work is needed to better understand predictors of adjustment among bereaved siblings to best prepare them and promote optimal outcomes.

#### 445 | Emotional distress, quality of life and complicated grief of parents whose child died of cancer: The role of gender and time elapsed since death

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**Background/rationale or Objectives/purpose:** A child's bereavement is a difficult period of adjustment for parents. They are more at risk of developing psychological issues than other parents. Their long-term adjustment and the differences between mothers and fathers are poorly documented. Our objectives are 1/ to describe perceived health and pathological grief of bereaved parents, and 2/ to identify the role of parent's gender and time.

**Methodology or Methods:** An online questionnaire was completed by 32 mothers and 14 fathers of children who died of cancer. Quality of life was measured by the Medical Outcomes Study Short Form (SF-12), emotional distress by the Brief Symptom Inventory (BSI-18) and complicated grief by the Inventory of Complicated Grief (ICG-19).

**Impact on practice or Results:** Some parents report emotional distress long after the child's death. No significant differences were identified between mothers and fathers on distress and quality of life. However, there is a significant difference on complicated grief scores between the two periods measured: 12 months following the child's death and 12 months prior to their participation (p

**Discussion or Conclusions:** Parents of children who died of cancer are particularly vulnerable. Contrary to expectations, we found no differences on quality of life and distress between mothers and fathers. However, in the first year following the child's death, mothers are significantly more likely to experience complicated grief than fathers. For practitioners, this means both the needs of fathers and mothers must be considered, even if the latter are more vulnerable during their first year of bereavement.

#### 442 | Longitudinal Understanding of Prognosis among Adolescents with Cancer

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**Background/rationale or Objectives/purpose:** We examined adolescents' understanding of their cancer prognosis relative to their parents and oncologists, at diagnosis and 1-year follow-up.

**Methodology or Methods:** Families of adolescents (aged 10-17) were recruited following new diagnosis or relapse of cancer. Adolescents

( $M_{age} = 13.34$ ,  $SD = 2.4$ ) and parents completed measures at enrollment (74 adolescents, 68 mothers, 40 fathers) and 1 year (76 adolescents, 69 mothers, 35 fathers). The adolescent's oncologist reported prognosis on a 0–100% scale at enrollment (48 surveys). Analyses examined differences between informants and change over time via mixed models.

**Impact on practice or Results:** Oncologists reported average prognosis of 67% (+20.7). Most oncologists discussed prognosis in numerical terms with the adolescent (65%), similar to mothers (50%) and fathers (54%). Adolescent prognosis estimates were stable from diagnosis ( $M = 90\% + 11.4$ ) to 1 year ( $M = 93\% + 17.1$ ). Mother and father prognosis estimates were stable from diagnosis ( $M = 85\% + 17.0$ ,  $M = 86\% + 17.4$ , respectively) to 1 year ( $M = 86\% + 16.8$ ,  $M = 83\% + 23.7$ ). Based on discrepancy scores, adolescents reported more favorable prognosis than their oncologist ( $M = -25.0 + 20.2$ ), but comparable to mothers ( $M = -3.7 + 14.8$ ,  $M = -3.1 + 16.0$ , respectively) and fathers ( $M = -3.2 + 15.4$ ,  $M = .3 + 21.0$ ) at diagnosis and 1 year. Discrepancy scores were stable over time. At diagnosis, adolescent-father ( $p = .025$ ) and adolescent-oncologist ( $p < .001$ ) discrepancies were larger for youth with advanced than non-advanced cancer.

**Discussion or Conclusions:** Adolescent prognosis estimates were comparable to their parents at diagnosis and 1 year, but more favorable than oncologists. Given their optimistic estimates, improvements to prognosis education for adolescents with advanced cancer are particularly warranted.

### 361 | End-of-Life Communication among Caregivers of Children with Cancer

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**Background/rationale or Objectives/purpose:** To examine caregiver communication and preferred forms of support with children near end-of-life (EoL).

**Methodology or Methods:** Caregivers of children who died from cancer were recruited through a social media group. Participants ( $N = 139$ ) reported on their communication and support preferences for EoL conversations.

**Impact on practice or Results:** Most participants were female (79%;  $n = 110$ ) and white (95%;  $n = 132$ ), with an average age of  $49.74 \pm 8.31$ . Deceased children ranged from 0.5–37 years old ( $M_{age} = 13.11 \pm 7.3$ ). Length of illness was  $< 1$  to  $> 5$  years (25%,  $n = 34$ ; 12%,  $n = 16$ , respectively).

Most caregivers spoke with their child about prognosis (62%;  $n = 139$ ) and death (64%;  $n = 104$ ). Half of children (49%;  $n = 132$ ) asked about death. Older children (63%  $> 12$  years) were more likely to ask about dying,  $t(130) = 2.19$ ,  $p = .03$ , which was related to conversations about prognosis,  $r = -.49$ ,  $p < .001$ , and death,  $r = .55$ ,  $p < .001$ . Occurrence of conversation was unrelated to caregiver age, sex, relationship, diagnosis, illness length, or remission. Most caregivers (78%;  $n = 99$ ) wanted support to talk to their children. Fewer wanted providers to speak to children directly (13%;  $n = 17$ ) or be present while caregivers spoke to the child (20%;  $n = 26$ ). Content analysis of open-ended responses to support preferences (31%;  $n = 39$ ) comprised six themes: help family prepare; provide support staff (e.g., other parents/chaplain); leave it to the family; what not to do; no opportunity (e.g., death quick, child young); and don't know.

**Discussion or Conclusions:** Most caregivers discussed issues pertaining to EoL irrespective of demographic or medical factors. Qualitative themes provide insight into support desired by families to help them with these difficult conversations.

### 276 | Psychological distress in breast cancer patients treated with radiotherapy: Preliminary study

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**Background/rationale or Objectives/purpose:** The primary goal of the present study is to evaluate the psychological distress in breast cancer patients receiving radiotherapy (RT). Additionally, this study will examine the variables, including the risk factors, that affect the development of distress in this group of patients.

**Methodology or Methods:** The present study will include patients who have undergone surgery for primary breast cancer without metastasis/recurrence and who are scheduled for adjuvant RT. The primary outcome measure was the prevalence of psychiatric comorbidities according to the MINI (Mini-international neuropsychiatric interview) at baseline and RT completion. The secondary outcome measure was the total score of HADS (Hospital anxiety and depression scale) at baseline and RT completion.

**Impact on practice or Results:** Participants are currently being recruited for this study, which has an estimated completion date of December 2019. Because the stage of the disease can have a major influence on treatment decisions, we will analyze data from patients with early-stage breast cancer (stages 0–I) including ductal carcinoma in situ and advanced breast cancer without metastasis (stage II–III), separately.

Of the 31 patients included in the final analysis, the prevalence of psychiatric comorbidity at RT completion ( $P = 0.258$ ) and total score of HADS over time ( $P = 0.087$ ) in patients with early stage ( $N = 17$ ) were not significantly different compared to advanced stage group ( $N = 14$ ). These results were not significantly different between the groups classified on the basis of chemotherapy history ( $P > 0.999$ ,  $P = 0.397$ ). The risk factors of psychiatric comorbidities after RT was related to age ( $P = 0.085$ , 95% CI [0.949–1.380]), LOT ( $P = 0.047$ , 95% CI [0.720–0.998]) and menopause ( $P = 0.028$ , 95% CI [1.578–30.53.279]).

**Discussion or Conclusions:** These findings will contribute to our understanding of the psychological effects undergoing RT. However, due to the small number of participants, psychological effects of RT in patients with breast cancer remains to be clarified.

### 216 | Dare to Care: patients with advanced cancer and their informal caregivers want personal well-organized care

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**Background/rationale or Objectives/purpose:** Palliative care is focussed on improving quality of life of patients with a life-threatening illness and their informal caregivers. It remains unclear what good quality of care entails for patients with advanced cancer and their informal caregivers. Therefore, the aim of this study is to explore the essential aspects of palliative care according to patients with advanced cancer and their informal caregivers.

**Methodology or Methods:** Seven focus groups and seven in-depth semi-structured interviews with 18 patients suffering from advanced cancer and 15 informal caregivers were conducted in the Netherlands. All interviews were audiotaped, transcribed verbatim, and open coded using a thematic analysis approach.

**Impact on practice or Results:** Two essential aspects of quality of care from the patients' and informal caregivers' perspective arose: 'communication and relation' and 'organization of care'. Regarding communication and relation, patients and informal caregivers found it essential that health care professionals were personally engaged and provided support and compassion. Regarding organization of care, patients and

informal caregivers expressed the importance of well-organized logistics tailored to needs of the receiver. Patients and informal caregivers expressed the importance of supportive care being offered multiple times during the disease trajectory.

**Discussion or Conclusions:** This study shows that it is important for patients with advanced cancer and their informal caregivers that health care professionals are personally engaged and care is patient-centred organised and coordinated. To optimise quality of care, it is of utmost importance that health care professionals have good communication skills and explore the patients' and informal caregivers' unique experiences, needs, preferences, and expectations.

### 199 | Fear and Anxiety Regarding Cancer Recurrence, Progression, and Death: Unaddressed Concerns for Patients with Primary Brain Tumor

*Autumn Lanoye, Farah Aslanzadeh, Sarah Braun, Mariya Husain, Ashlee Loughan*

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**Background/rationale or Objectives/purpose:** Death anxiety and fear of progression/recurrence is widespread among cancer survivors. Research has explored prevalence rates, impact on quality of life, and treatment approaches across a variety of cancers; however, these issues appear to have been largely overlooked among patients with primary brain tumors (PBT). Thus, we conducted a systematic literature review examining how neuro-oncology has been represented in the extant literature regarding death anxiety and fear of cancer progression/recurrence.

**Methodology or Methods:** A systematic literature review was conducted across PubMed, CINAHL, and PsycINFO using pre-specified search terms. Studies were included if they were peer-reviewed, used quantitative methods, limited their sample to cancer populations, provided a breakdown of specific cancer diagnoses (if mixed sample), and assessed fear/anxiety specific to cancer progression, recurrence, and/or death.

**Impact on practice or Results:** Following an initial screen of title/abstract for relevance, 1561 full-text articles were reviewed and considered for inclusion; 336 studies met full criteria and were included for analysis. Of the 134,392 cancer patients represented in these samples, only 0.17% had a diagnosis of PBT. Death anxiety and fear of progression/recurrence was most commonly assessed in breast, colorectal, prostate, and gynecological cancers.

**Discussion or Conclusions:** Assessment of anxiety regarding disease progression, recurrence, and death is extremely underrepresented within the brain tumor population—due in large part to many studies specifically excluding participants and patients with central nervous system disorders. This is of particular concern given that this gap in knowledge prevents clinicians from assessing risk and providing evidence-based treatment to address existential concerns in the neuro-oncology setting.

### 194 | A case of terminal breast cancer patient who experienced peaceful days by the co-operative palliative care with local hospital and university hospital

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**Background/rationale or Objectives/purpose:** In Japan, a lot of cancer patients are visiting a local hospital rather than a regional cancer cooperation hospital because many local hospitals are not authorized such certification. However, lack of psycho-oncologist in local hospital makes it difficult to give appropriate support for patients having psychiatric problems. We propose how to incorporate patient's request to stay home and to visit local hospital.

**Methodology or Methods:** The patient was 65 years old male having breast cancer with liver metastases. She has been followed by a lo-

cal surgeon more than 5 years whom she has built a firm relationship. During her monthly follow up, she suddenly got manic state and began wasting her money. Her visiting hospital did not have psychiatric department, so she was referred to my university hospital.

**Impact on practice or Results:** Risperidone 2 mg/day has been prescribed. Her YMRS score was improved from 24/60 at her first visit to 4/60 at her second visit. Risperidone was effective with rapid efficacy with low doses. The differential diagnosis causing for this manic state are 1)metastatic brain tumors, 2)side effect of chemotherapy, 3)endogenous psychosis. However, she has passed away peacefully because of respiratory failure.

**Discussion or Conclusions:** There are two important points. First, the patient wanted to stay where she has lived for a long time and to have her primary doctor to look at her to the last. Appropriate joint medical care enabled her to have peaceful days. Second, differential diagnosis was difficult. Within limited information, careful consideration of history and data enabled us to make proper diagnosis and treatment.

### 188 | Implementation of Managing Cancer and Living Meaningfully (CALM) in Dutch Cancer Care settings

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**Background/rationale or Objectives/purpose:** Many interventions in psychosocial oncology are not implemented in daily practice, despite scientific data supporting their effectiveness. Managing Cancer and Living Meaningfully (CALM) is a brief, evidence-based intervention tailored for patients with advanced cancer and their loved ones. Research on the effectiveness of CALM in different cultural settings is currently underway as part of a large Global Program.

**Methodology or Methods:** We are currently conducting a multi-center, intervention-only, mixed-method pilot study assessing the applicability, feasibility, and preliminary effectiveness of CALM in the Dutch setting. Additional data is being collected to assess sustainability of the program post-study. Professionals at three cancer care settings in the Netherlands have been trained in the delivery of CALM. A total of 54 patients will be recruited in the study, including a subgroup of 20 patients who have a positive response on immunotherapy, which typically results in longer but uncertain life expectancy.

**Impact on practice or Results:** Positive impact on practice so far includes: involvement of physicians in psychosocial care, development of a common language and a standardized treatment across disciplines, improved use of peer supervision, and new national and international collaborations. Quantitative baseline data will be presented.

**Discussion or Conclusions:** Implementing a psychotherapeutic intervention in the context of research has demonstrated benefits such as increased rigor, dissemination of findings in the clinical and the scientific community, and the simultaneous collection of evidence during implementation. To ensure sustainability of the program post-study it is necessary to transition the delivery of CALM from research to routine clinical care.

### 179 | Fear of Dying in Brain Tumor Patients: Prevalence and Association with Depression

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**Background/rationale or Objectives/purpose:** Understanding the factors that impede quality of life (QoL) becomes important when given a primary brain tumor (PBT) diagnosis due to high disease burden and treatment severity. Psychological distress may arise, which often includes fear of dying. This study investigated the prevalence of fear of dying in neuro-oncology and its relationship with symptoms of depression.

**Methodology or Methods:** A total of 102 PBT patients (age range = 19–82; grades I–IV) receiving care from a National Cancer Institute cancer center were surveyed using the Beck Anxiety Inventory (BAI) and Beck Depression Inventory – Second Edition (BDI-II). A single-item question from the BAI measured fear of dying. Descriptive analyses, t-tests, and Pearson correlations were conducted. Age, gender, and tumor grade were also investigated as correlates.

**Impact on practice or Results:** Thirty-one percent ( $n = 32$ ) of PBT patients endorsed fear of dying on the BAI. There was a positive correlation between fear of dying severity and depression symptomology (BDI-II;  $r = 0.33$ ,  $p < 0.01$ ). There was also a difference in depression scores (BDI-II) for those who endorsed fear ( $M = 16.7$ ;  $SD = 11.1$ ) when compared to those who did not ( $M = 12.6$ ;  $SD = 8.1$ );  $t(100) = 2.10$ ,  $p = .04$ . There was no difference in age, gender or tumor grade ( $p > .05$ ).

**Discussion or Conclusions:** Fear of dying affected approximately one third of the PBT patients in this study. Patients who reported a fear of dying had higher levels of depressive symptomology than those who did not. Early identification of fear of dying may help improve QoL, existential support, and palliative care for PBT patients.

### 118 | The association of preloss and postloss grief reaction in a sample of Chinese cancer family members

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**Background/rationale or Objectives/purpose:** Limited studies tracked the grief process starting from preloss period. We aim to explore and test the association of grief symptoms of cancer family members prior to and after the death.

**Methodology or Methods:** Between 2016 and 2018, we routinely administered Hogan grief reaction checklist along with other questionnaires in 163 family members of terminal cancer patients in a cancer center in Taiwan. Among them, we sent out a follow-up questionnaire to 51 family members, who were deemed appropriate, at 6 months after the death. A final sample of 36 returned the completed questionnaire.

**Impact on practice or Results:** The process of sample selection will be illustrated in detail in the presentation. The final sample of 36 samples were not statistically different in their age, gender, education level, religion, relationship to the deceased, and social support level. However, their number of previous loss and the duration of their care for the deceased were significantly longer than the family members not included. There's a moderate association between domains of grief reactions, such as despair, disorganized, panic, hostility, and hopelessness. However, there's low or insignificant association between preloss grief reactions and postloss ones.

**Discussion or Conclusions:** There's no significant association in pre-loss grief reaction and postloss ones. Potential bias in patient selection and the culture and grief reaction in the population studied will be explored. Other potential predictors for postloss grief will be discussed.

### 103 | Death Anxiety: Is This a Concern in Primary Brain Tumor Patients and their Caregivers?

*Mariya Husain*<sup>1,2</sup>, *Audrey Ann Lois Villanueva*<sup>2</sup>, *Rachel L. Boutt*<sup>2</sup>, *Sarah Ellen Braun*<sup>2</sup>, *Ashlee R. Loughan*<sup>2,1</sup>

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**Background/rationale or Objectives/purpose:** A terminal cancer diagnosis can be devastating and may cause an increase in death awareness and anxiety, negatively affecting quality of life (QoL) and overall health outcomes. One oncology population which may be particularly vulnerable, yet to-date uninvestigated, is primary brain tumor (PBT) patients and their caregivers, especially given the current lack of curative treatment options.

**Methodology or Methods:** Eighty-one PBT patients (age range 20–86 years) and 53 caregivers from a National Cancer Institute-designated cancer center were included. Dyads completed validated questionnaires including Templer's Death Anxiety Scale (DAS), Death Distress Scale (DDS), Patient Health Questionnaire (PHQ9), and Generalized Anxiety Disorder (GAD7). Demographics and tumor characteristics were also investigated as correlates. Descriptive analyses, t-tests, chi-square, and Pearson correlations were conducted.

**Impact on practice or Results:** Thirty-five percent ( $n = 28$ ) of PBT patients endorsed death anxiety. They were significantly younger, three times more likely to be female, twice as likely to have a low-grade tumor and demonstrated higher scores in emotional distress ( $p < .05$ ). Forty-seven percent ( $n = 25$ ) of caregivers endorsed death anxiety. Caregivers' death anxiety severity was affected by patients' tumor grade ( $p < .05$ ; I<II>III) and correlated with caregiver psychological distress ( $p < .01$ ), yet not with patient distress symptomology ( $p > .05$ ).

**Discussion or Conclusions:** More than one-third of PBT patients and almost half of caregivers endorsed death anxiety. Several demographic variables were related to death anxiety. Considering this is the first study on death anxiety in neuro-oncology, these rates suggest a profound need for supportive care in this population. These results encourage development and investigation of tailored end-of-life interventions for PBT patients and their loved ones.

### 61 | Palliative Care Issues, Recommendations and Strategies Targeting Adolescents and Young Adults with Cancer

*Lorna Larsen*

*Team Shan Breast Cancer Awareness for Young Women (Team Shan), Huntsville, Canada*

**Background/rationale or Objectives/purpose:** Every year in Canada, about 8,000 adolescents and young adults (AYA) between 15 and 39 years of age are diagnosed with cancer. Some will survive their cancer journey and others will not. For over a decade, the gaps in palliative care for the AYA cancer sub population have been identified and recommendations made to address their unique palliative care needs.

The Team Shan Breast Cancer Awareness for Young Women (Team Shan) presentation will review AYA palliative care issues and current Canadian efforts to both understand and address these needs. Lived experiences and emerging strategies to improve the palliative care experience for AYA with cancer or other life threatening illness, their family, friends and health care providers will be highlighted.

**Methodology or Methods:** Lorna Larsen, Team Shan President lived the palliative care experience with her daughter, Shanna, who passed away from breast cancer at the age of 24.

Team Shan reviewed published palliative care needs and recommendations for AYA with cancer. Team Shan worked with community partners at both the provincial and national level to make a difference for AYA with cancer following in Shan's footsteps. Recent community and clinical efforts were also reviewed.

**Impact on practice or Results:** Emerging strategies to address palliative care needs for AYA with cancer have the potential to close identified AYA palliative care gaps.

**Discussion or Conclusions:** Historical context on palliative care issues and recommendations for AYA with cancer has been identified. Promising community and clinical efforts are making a difference for the AYA population and provide hope for future AYA palliative care best practice..

### 35 | Changes in death preparedness and its impacts on psychological distress and quality of life for terminally ill cancer patients in their last year of life

*Siew Tzuh (Stephanie) Tang*

*Chang Gung University School of Nursing, Tao-Yuan, Taiwan*

**Background/rationale or Objectives/purpose:** Background: Death preparedness, a distinct but related concept to prognostic awareness (PA), allows patients to prepare, practically, psychologically, and interpersonally, for death. However, death preparedness has rarely been studied and primarily with insufficient cross-sectional designs.

**Objective:** To explore the course of changes in death preparedness and evaluate its impacts on severe anxiety symptoms, severe depressive symptoms, and quality of life (QOL) in cancer patients' last year.

**Methodology or Methods:** **Methods:** For this prospective, longitudinal study, we consecutively recruited 277 terminally ill cancer patients. The course of changes in death preparedness and its impacts on severe anxiety symptoms, severe depressive symptoms, and QOL were examined by univariate and multivariate generalized estimating equation analyses, respectively.

**Impact on practice or Results:** **Results:** The prevalence of death preparedness was 54.43%-65.85% in the last year, with a significant decrease only 91-180 vs. 181-365 days before death (odds ratio [OR: 95% CI] = 0.67: 0.47, 0.97)). Death preparedness was associated with a lower likelihood of severe anxiety symptoms (adjusted OR [AOR: 95% CI] = [0.47: 0.27, 0.79]) and severe depressive symptoms (0.61 [0.39, 0.95]), but not with QOL (b [95% CI] = 0.49 [-2.13, 3.11]). However, participants with accurate PA were more likely to experience severe depressive symptoms (2.63 [1.63, 4.25]).

**Discussion or Conclusions:** **Conclusions:** Death preparedness remained largely stable in cancer patients' last year and was significantly associated with their psychological distress at end of life (EOL). Healthcare professionals should not only cultivate cancer patients' accurate PA earlier in their terminal-illness trajectory to facilitate high-quality EOL care, but also promote their death preparedness to improve their psychological well-being at EOL.

### 16 | Cancer Patients' Concordance between Preferred and Received Life-Sustaining Treatment States Is Facilitated by Accurate Prognostic Awareness, Better Quality of Life, and More Depressive Symptoms, but Impeded by More Anxiety Symptoms

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**Background/rationale or Objectives/purpose:** **Purpose:** To examine the effectiveness of an advance care planning (ACP) intervention in facilitating concordance between cancer patients' preferred and received life-sustaining treatment (LST) states/patterns and to explore modifiable factors facilitating or impeding such concordance.

**Methodology or Methods:** **Methods:** Terminally ill cancer patients (N = 460) were randomly assigned 1:1 to the experimental and control arms of a randomized clinical trial, with 430 deceased

participants comprising the final sample. States of preferred LSTs (cardiopulmonary resuscitation, intensive care unit care, chest compression, intubation with mechanical ventilation, intravenous nutrition, and nasogastric tube feeding) and LSTs received in the last month were examined by hidden Markov modeling. Concordance and its modifiable predictors were measured/evaluated by percentage/kappa and multivariate logistic regression, respectively.

**Impact on practice or Results:** **Results:** We identified three LST-preference states (uniformly preferring LSTs, rejecting LSTs except intravenous nutrition support, and mixed LST preferences) and three received LST states (uniformly receiving LSTs, received intravenous nutrition only, and selectively receiving LSTs). Concordance was slightly but not significantly higher in the experimental than the control arm (62.14% vs 61.95%; kappa [95% CI]:0.126 [0.032, 0.221] vs 0.050 [-0.028, 0.128]). Preferred-received LST state concordance was facilitated by accurate prognostic awareness, better quality of life (QOL), and more depressive symptoms, whereas concordance was impeded by more anxiety symptoms.

**Discussion or Conclusions:** **Conclusions:** Our ACP intervention did not facilitate concordance between terminally ill cancer patients' preferred and received LST states, but patient value-concordant end-of-life care may be facilitated by interventions to cultivate accurate prognostic awareness, improve QOL, support depressive patients, and clarify anxious patients' over-expectations of LST efficacy.

## M. PATIENT-ORIENTED RESEARCH

### 767 | Reintegration Following Non-CNS Cancer – Can we Apply Methods from Clinical Neuropsychology?

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**Background/rationale or Objectives/purpose:** The literature on cancer-related cognitive impairment (CRCI) suggests that community-based neuropsychological rehabilitation tools can be useful in reintegrating survivors of non-CNS cancer. The Sulam ("Ladder") Program was developed to offer non-CNS cancer survivors neuropsychological treatment with a vocational focus. The innovative program integrates different content areas, including treatment of cognitive deficits, vocational rehabilitation for individuals experiencing cognitive and emotional changes, and holistic psychosocial intervention.

**Methodology or Methods:** The program is grounded in intervention for acquired brain injury and adapted to address the specific needs of cancer survivors in three primary domains: cognitive, emotional, and vocational. It supports participants in returning to work, in accordance with their post-cancer abilities. In six months, it includes a wide range of interventions, among them: individual and group psychotherapy, CRCI-adapted groups, yoga, sexuality and nutrition groups, job/academic consultation and placement.

**Impact on practice or Results:** Results of our pilot group showed that all participants, who had lost jobs prior to beginning the program, initially had minor but significant deficits in attention, executive functions, and memory, and experienced changes in functioning, mood, and behavior. Upon program completion, there were improvements in these measures, alongside high rates of reintegration into employment or academic programs.

**Discussion or Conclusions:** Beyond vocational success, preliminary results show that most participants experienced improvements in emotional and cognitive functioning, supporting the need for and potential benefit of post-cancer neuropsychological rehabilitation day programs with a vocational focus. Adherence rates and initial observational data are encouraging and suggest value in the group setting that goes beyond individual therapy.

### 749 | Evaluating the impact of patient and public involvement (PPI) on the life after prostate cancer diagnosis study (LAPCD)

*Jo Brett<sup>1</sup>, Hugh Butcher<sup>2</sup>, John Keenan<sup>2</sup>, Darryl Catton<sup>2</sup>, Zoe Davey<sup>1</sup>, Fiona Matley<sup>1</sup>, Adam Glaser<sup>2</sup>, Anna Gavin<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** While the PPI evidence base has expanded significantly over the last decade, the reporting of PPI has often been partial. Inconsistent reporting creates a fragmented evidence base making it difficult to draw together our collective understanding of what works, for whom, why and in what context. We set out to evaluate and report a novel method of PPI in a large national study in the UK exploring life after a prostate cancer diagnosis, where PPI was integrated into the study as an independent work-stream

**Methodology or Methods:** A link to an online survey was emailed to all members of the research team (n = 38), including researchers, service users, funders and clinical advisory group, in 2018 at the end of this 3 year study. Semi-structured interviews were conducted with 16 members of the research team. Survey results were reported using descriptive statistics and interviews were analysed with thematic analysis using the framework approach. Results were reported using the GRIPP2 guidelines

**Impact on practice or Results:** Embedding PPI into the study as an independent work-stream was identified as a particular strength, and benefitted from effective organisation and leadership. Research team members recognised that a supportive environment that valued PPI was fostered which helped sustain engagement. Case studies of PPI methods used that showed impact on the study are reported

**Discussion or Conclusions:** Providing PPI as an independent funded work-stream helped provide the contextual and process factors important to have a real impact on the LAPCD study

### 730 | Patients' Self-Reported Pain, Pain Interference and Quality of Life in Patients with a Brain Tumor Attending Neurology Clinics

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**Background/rationale or Objectives/purpose:** PURPOSE. Studies report neurology outpatients experience pain that interferes with function and quality of life. The inconsistent use of standardized questionnaires makes bench-marking difficult for improving care quality. This study hoped to fill the gap by examining pain, pain interference and quality of life in out-patients of neurological clinics in a quaternary health care center, using the same questionnaires.

**Methodology or Methods:** METHODS. Quantitative descriptive study design was used to recruit a convenience sample of neurology patients. They completed self-report questionnaires about socio-demographic information, pain experience (BPI-SF), quality of life (EQ-5D) and pain self-efficacy (PSEQ-2).

**Impact on practice or Results:** RESULTS. 409 patients participated, including 40 diagnosed with a brain tumor. Of the patients with a brain tumor, 56.4% female, mean age 52 years, 77.5% college or university education and 58% married. Thirty percent brain tumor patients reported experiencing pain in the last 24 hours; 72.7% reported "Pain Now" at 4 or above on 0 to 10 scale. There was variation in mean pain ("Pain Now" = 4.9; "Worst Pain" = 5.8; "Least Pain" = 3.6). Of concern, 63.6% reported having pain for more than 3 months.

Only 40% reported they had all the information they needed to manage their pain. Pain interfered with work and living a normal lifestyle. Mean pain interference (BPI) was 5.2 on a scale from 0 to 10. Brain tumor patients rated their health today quite high compared to other neurology patients.

**Discussion or Conclusions:** Results indicate importance of asking patients about pain experience, quality of life and need for information to manage their pain.

### 702 | The feasibility of measuring physical function and patient-reported outcomes across the surgical timeline in head and neck cancer

*Julia Daun<sup>1</sup>, Rosemary Twomey<sup>1</sup>, Joseph Dort<sup>2,3</sup>, Lauren Capozzi<sup>1,4</sup>, Trafford Crump<sup>3,5</sup>, George Francis<sup>2,6</sup>, T. Wayne Matthews<sup>3</sup>, Shamir Chandarana<sup>3</sup>, Rob Hart<sup>3</sup>, Christiaan Schrag<sup>3</sup>, Jennifer Matthews<sup>3</sup>, C. David McKenzie<sup>3</sup>, Harold Lau<sup>7</sup>, S. Nicole Culos-Reed<sup>1,2,6</sup>*

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**Background/rationale or Objectives/purpose:** Head and neck cancer (HNC) is the sixth most commonly diagnosed cancer world-wide. Physical activity enhances physical and psychosocial functioning of HNC patients. All HNC patients undergoing major surgery are managed by a multidisciplinary team that uses a postoperative care pathway; however, the current established protocols do not target the preoperative physical condition patients. Prehabilitation is an intervention designed to use the waiting period before surgery to optimize the patient's condition and may be a complementary addition to existing perioperative protocols.

**Methodology or Methods:** In phase I, using a mixed-methodological approach, a prospective cohort study will: 1) assess the feasibility of measuring physical functioning and patient-reported outcomes of surgical HNC patients across their clinical timelines; and 2) understand how exercise fits into the care pathway, by using a patient-oriented framework to conduct semi-structured interviews with a subset of these patients. Staff will also be interviewed to provide feedback on exercise prehabilitation logistics for the clinic setting. In phase II, an exercise prehabilitation intervention will be implemented, with feasibility as the primary outcome.

**Impact on practice or Results:** Data collection will take place between May and December 2019.

**Discussion or Conclusions:** This project aims to positively impact the quality of life of HNC patients as well as provide an innovative model for uptake by other tumour groups and clinical sites, for the implementation of exercise into standard cancer care.

### 633 | Changes in distress through 2 year survivorship in a sample of autologous and allogeneic hematopoietic cell transplantation recipients: Opportunities to target screening for distress administration and enhance whole patient care?

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**Background/rationale or Objectives/purpose:** Hematopoietic cell transplantation (HCT) recipients' distress predicts negative physical and psychosocial outcomes. Routinely screening for distress (SFD) allows early symptom identification and interventions to improve outcomes. The policy at the Alberta Blood and Marrow Transplant Program (ABMTP) at the Tom Baker Cancer Centre (TBCC) is for SFD administration at each clinic visit. However, patients make many visits during the intensive treatment period, so this high frequency of administration may lead to survey fatigue, which may inadvertently decrease its clinical utility. To help identify clinically-indicated time points for SFD administration and ultimately enhance its clinical utility, this retrospective longitudinal study seeks to: 1) describe changes in distress, and; 2) examine associations between demographic/medical variables and changes in distress in a sample of HCT recipients from pre-transplant through 2 year survivorship.

**Methodology or Methods:** SFD forms (Edmonton Symptom Assessment Scale and Canadian Problem Checklist) were collected from the outpatient electronic medical records of 327 autologous and 237 allogeneic HCT recipients in the ABMTP from 2013–2016. Patient medical and demographic variables were imported from the Canadian Blood and Marrow Transplant Group's database.

**Impact on practice or Results:** Hierarchical linear modelling will be used to examine changes in SFD scores and to test if demographic and medical variables predict changes in SFD scores over the HCT trajectory. Additionally, data for autologous and allogeneic HCT recipients will be analyzed separately and compared.

**Discussion or Conclusions:** Our results will provide a better appreciation of the HCT recipients' experience of distress across the transplant trajectory and inform guidelines for clinical utilization of SFD.

## 620 | Distress thermometer and cardiotoxicity in patients with middle to lower third esophageal cancer receiving chemoradiotherapy

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**Background/rationale or Objectives/purpose:** Esophageal cancer (EC) ranks the 8<sup>th</sup> of cancer deaths in Taiwan. Concurrent chemoradiotherapy (CCRT) is the main treatment with cardiac toxicity a major complication. There is close proximity between the radiation field and heart in middle to lower third (M-L/3) EC. We aim to explore whether there is correlation among CCRT, cardiotoxicity and emotional distress.

**Methodology or Methods:** We retrospectively surveyed M-L/3 EC patients receiving CCRT during Jan 2017 and Aug 2019. All patients received echocardiography exam. Emotional distress was assessed by the performance score, pain score and distress score.

**Impact on practice or Results:** A total of 16 patients were enrolled, 13 were male, average age was 57 years, mean body mass index was 21.58 kg/m<sup>2</sup>, 13 were smokers and 10 drank alcohol. Mean left ventricle (LV) ejection fraction was 72.3 %, LV diastolic dimension was 43.9 mm, LV systolic dimension was 25.7 mm and LV mass was 81.2 mg. Emotional distress scores increased following treatment; mean performance score 0.7 increased to 1.0, mean pain score 2.0 increased to 3.6 and mean distress score 3.5 increased to 4.7. Patients were then divided

into 2 groups according to total emotional assessment scores post treatment, with 7 patients scoring > 4 and 9 patients ≤ 4. Only female sex was found to be associated with higher emotional distress scores.

**Discussion or Conclusions:** Echocardiography parameters were not found to be associated with increased emotional distress in M-L/3 EC patients receiving CCRT. Further studies with larger sample size and alternate myocardial ischemia assessments may provide further insight as to whether or not cardiac toxicity contributes to emotional distress.

## 608 | Understanding the impact of having a genetic test result reclassified

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Herston, Australia; <sup>6</sup>Hunter Family Cancer Service, Waratah, Australia

**Background/rationale or Objectives/purpose:** To explore the psychosocial impact of a reclassification of a genetic test result in patients who have had the pathogenicity of their BRCA1, BRCA2 or Lynch syndrome related genetic test result reclassified.

**Methodology or Methods:** We undertook semi-structured in-depth interviews with 12 patients who have experienced a reclassification of their risk with either their risk upgraded or downgraded. The interviews encompassed issues such as the impact of the reclassification on self, family, cancer-related worry and risk perception. The recruitment will continue till data saturation is achieved. Thematic analysis of the interview data was undertaken.

**Impact on practice or Results:**

The participants demonstrated contrasting responses to their reclassification. Where the result was upgraded to pathogenic; the reclassification was mostly met with acceptance. In contrast, some of the participants whose risk was downgraded conveyed disbelief and shock. A few participants had limited recall of the results. Participants conceptualized their reclassified results differently and sought additional information to varying degrees. None of the participant reported negative views of genetic testing after receiving their reclassification. Participants indicated a preference for being informed of the possibility of a reclassification at the time of initial genetic testing and indicated their preference for face to face consultation to receive the reclassified results.

**Discussion or Conclusions:** The findings from this study provide insights into the unique experiences of those who have experienced a BRCA1/2 or Lynch Syndrome gene variant reclassification. Given the increased uptake of genetic testing and the possibility of a reclassification over time, understanding the impact of a reclassification is an important topic for future research.

## 601 | Experiences and unmet needs of adult cancer survivors in transitions

*Margaret Fitch*

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**Background/rationale or Objectives/purpose:** To report on the experiences of adult cancer survivors as they transition from end of cancer treatment to follow-up care and to discuss how we can best develop actionable recommendations that would ensure a smoother transition from treatment to survivorship.

**Methodology or Methods:** A national survey of cancer survivors (1 to 3 years post treatment) was conducted to identify their unmet needs and experiences with follow-up care. In collaboration with ten Canadian provinces, samples were drawn from cancer registries and questionnaire packages were distributed by mail. Surveys were available in English and French and completed either on paper or online. Data reported herein are for the adult group.

**Impact on practice or Results:** 40,790 surveys were mailed out with 12,929 surveys completed and returned by adults 30 years and older (32% response rate). Fifty-one percent of this sample were females, 60% were 65 years or older, and 77% had not experienced metastatic disease. Eighty-seven percent reported at least one physical concern, 78% identified at least one emotional concern, and 44% experienced at least one practical concern. For those who sought help, a third of the sample reported either having difficulty or not obtaining assistance for those needs.

**Discussion or Conclusions:** The findings indicate that significant proportions of adult survivors report concerns and unmet needs about physical, emotional, and practical issues. Strategies to address these care gaps are desperately needed if we are to truly provide person-centered care throughout the cancer trajectory.

### 531 | Investigation and Analysis of Symptom Cluster in Hospitalized Cancer Patients

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**Background/rationale or Objectives/purpose:** The purpose of this study was to obtain the occurrence and distribution characteristics of symptoms an clusters by analyzing the symptom survey data of hospitalized cancer patients, and also to pay high attention to suicidal ideation patients.

**Methodology or Methods:** A total of 600 hospitalized cancer patients were randomly selected from different clinical department in Hunan Cancer Hospital from Nov. to Dec., 2017 for investigation. MDA-SI-C, PHQ-9, GAD -2 etc. were used for survey. The SPSS21.0 was used for statistical analysis.

**Impact on practice or Results:** The total score of 13 core symptoms of 600 hospitalized cancer patients was  $19.88 \pm 14.71$ . Spearman correlation analysis between symptoms showed that there was a positive correlation among 13 symptoms (P

The symptoms with factor load over 0.40 were selected for the classification of the symptom clusters,

Based on dynamic clustering method, there were 3 subgroups divided

The incidence of suicidal ideation in the most recent week was 2.69% (17).there was a statistical difference in different degrees of depression (P

**Discussion or Conclusions:** Most of hospitalized cancer patients suffered the symptoms such as distress and suicidal ideation so on. There was a positive correlation among symptoms. There were three main symptom clusters: (1) comprehensive adverse reaction symptoms; (2). symptoms of upper gastrointestinal adverse reactions, (3) symptoms of psychological disorders. There were 3 subgroups divided: all low symptoms, low pain and moderate symptoms, high symptoms. The incidence of suicidal ideation was related with depression. The more severe the depression was, the higher the incidence of suicidal ideation was. But no suicide occurred after interventions and followup.

### 529 | Exploration of Pivotal Encounters and Temporal Dynamics of Distress across the Cancer Treatment Trajectory

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**Background/rationale or Objectives/purpose:** Timing and frequency of cancer distress screening is inconsistent. The American College

of Surgeons CoC accreditation standards require distress screening at least once, at a pivotal visit, but allow institutions to define “pivotal” encounters. IPOS endorses monitoring distress as the 6<sup>th</sup> vital sign, implying that distress trends like homeostatic variables. If distress is exacerbated before, but relieved after a clinical encounter, then timing of screening is germane to the need for intervention. The purpose of the proposed study is to empirically identify “pivotal” visits and trends in distress over time.

**Methodology or Methods:** We propose a mixed methods study. Breast cancer patients, stage I-III, will complete distress screening bi-weekly and before and after all clinic appointments from diagnosis through 3 months post-treatment. We will interview participants before and at the end of chemo/radiation therapy, and 3 months post-treatment to ascertain perceptions of events or changes that warrant distress assessment. Transcripts will be analyzed using content analysis. Pre- and post-visit distress scores will be compared to evaluate the effects of screening timing and to identify homeostatic trends. General mixture modeling will be used to identify trajectories of distress over time. Distinct trajectories will be compared with respect to participants’ demographic and clinical characteristics.

**Impact on practice or Results:** Findings will provide evidence to direct the frequency and timing of distress screening, and need for intervention.

**Discussion or Conclusions:** What strategies may be useful in recruiting and retaining participants?

What is a reasonable frequency for home-based distress assessments?

What patient-related data is most salient to collect in explaining distress trajectories?

### 524 | Patient-reported experience of diagnosis, management, and burden of renal cell carcinomas: Results from a global patient survey in 43 countries

*Deborah Maskens<sup>1</sup>, Rachel Giles<sup>1</sup>, Robert Bick<sup>2</sup>, Robin Martinez<sup>3</sup>, Malcolm Packer<sup>4</sup>, Daniel Yick Chin Heng<sup>5</sup>, James Larkin<sup>6</sup>, Axel Bex<sup>7</sup>, Michael Jewett<sup>8</sup>, Eric Jonasch<sup>9</sup>, Sara MacLennan<sup>10</sup>*

<sup>1</sup>International Kidney Cancer Coalition, Duivendrecht, Netherlands; <sup>2</sup>Kidney Cancer Canada, Toronto, Canada; <sup>3</sup>Smart Patients, Miami, USA; <sup>4</sup>Kidney Cancer UK, Cambridge, United Kingdom; <sup>5</sup>University of Calgary, Calgary, Canada; <sup>6</sup>Royal Marsden NHS Foundation Trust, London, United Kingdom; <sup>7</sup>Royal Free London NHS Foundation Trust and UCL Division of Surgery and Interventional Science, London, United Kingdom; <sup>8</sup>Princess Margaret Cancer Centre, University Health Network and University of Toronto, Toronto, Canada; <sup>9</sup>Department of GU Medical Oncology, UT MD Anderson Cancer Center, Houston, USA; <sup>10</sup>University of Aberdeen, Aberdeen, United Kingdom

**Background/rationale or Objectives/purpose:** The International Kidney Cancer Coalition (IKCC) is a federation of 38 affiliated patient organisations representing 1.2 million patients worldwide, committed to reduce the global burden of kidney cancer. A large-scale global survey of RCC patients to capture real world experiences has never been undertaken.

**Methodology or Methods:** The 35-question survey was designed to identify geographic variations in patient education, experience and awareness, access to care, best practices, quality of life and unmet psychosocial needs. It was completed online or in paper form by kidney cancer patients and/or their caregivers (Sept-Oct 2018).

**Impact on practice or Results:** 1,983 responses were recorded from 43 countries in 14 languages. Analysis revealed that at diagnosis, 43% of all respondents had no understanding of their RCC sub-type; RCC patients < 45 years old reported nearly twice as many barriers to treatment as patients > 45 at diagnosis. Females reported longer delays to diagnosis than males. Shared decision making remains aspirational: globally 29% of all patients reported no involvement in their treatment decision, responding ‘my doctor decided for me’. While 96% of respondents reported psychosocial impacts,

surprisingly, only 50% disclosed them to their healthcare team. Most difficult times experienced by patients varied by gender and by country.

**Discussion or Conclusions:** This research sheds light on the unmet needs in the RCC patient experience and highlights improvements to the design and delivery of supportive care. This first-ever global survey serves as a benchmark for longitudinal data collection and could be used to inform future disease-specific quality of life instruments.

### 516 | Development and psychometric validation of a short instrument for measuring health related quality of life in oncological patients in routine care

*Theresa Schrage, Mirja Görlach, Christiane Bleich, Holger Schulz*  
University Medical Center Hamburg-Eppendorf, Hamburg, Germany  
**Background/rationale or Objectives/purpose:** Purpose

Patient-reported outcomes (PROs) and especially Health related Quality of Life (HrQoL) could represent an important addition to current routine care of cancer patients. This study aims to develop a psychometric valid short questionnaire to measure HrQoL in cancer in- and out-patients for use in routine care.

**Methodology or Methods:** This study has two phases. (1) a qualitative study to develop a short questionnaire measuring HrQoL. This included interviews with patients and focus groups with clinicians to identify clinically relevant dimensions of HrQoL. (2) testing of the new questionnaire at two different times during treatment ( $t_0$  and  $t_1$ ) in five oncological clinics, additionally using standardized questionnaires to analyze the validity. With  $N = 630$  at  $t_0$  and  $N = 391$  at both sample points, imputation of missing values using Expectation-Maximization algorithm was carried out. Further explorative factor analysis with oblique rotation and confirmative Pearson's-product-moment correlations with established scales were computed. Re-test reliability was verified and measuring responsiveness by RM-ANOVA.

**Impact on practice or Results:** First results show a factor structure for four (mental distress, dignity in a clinical setting, by physical impairment affected autonomy) from five factors. Analysis revealed a good retest reliability and good convergent validity ( $r > .5$ ). Most scales also demonstrated good responsiveness to change.

**Discussion or Conclusions:** Results support the use of the questionnaire within this patient population in routine care. In order to attain this goal and therefore the improvement of HrQoL, the developed and tested questionnaire will be implemented in routine care, including an evaluation of this implementation process.

### 505 | A nationwide assessment of compliance to eviQ genetic testing and risk management guidelines relating to for people with hereditary cancer syndromes

*Rajneesh Kaur<sup>1</sup>, Bettina Meiser<sup>1</sup>, Judy Kirk<sup>2</sup>, Michelle Peate<sup>1</sup>, Robyn Ward<sup>3</sup>, Finlay Macrae<sup>4</sup>, Janett Hiller<sup>5</sup>, Alison Trainer<sup>6</sup>, Gillian Mitchell<sup>7</sup>*

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**Background/rationale or Objectives/purpose:** This project aimed to assess compliance to eviQ guidelines (web-based point of care cancer genetics guidelines regarding (i) consideration of BRCA1/2 testing, and (ii) risk management advice for BRCA1, BRCA2 and Lynch Syndrome-related mutation carriers.

**Methodology or Methods:** Data collection was performed by trained genetic counsellors at 12 familial cancer clinics across Australia. All files relating to unaffected carriers of BRCA1, BRCA2 and Lynch Syn-

drome-related mutations were audited and assessed in terms of whether or not risk management options recommended by eviQ applicable during each assessment period were discussed. All carriers were then invited to participate in a telephone interview to assess their adherence and barriers to recommended risk management guidelines.

**Impact on practice or Results:** For risk reducing recommendations around BRCA1/BRCA2 recording of advice in files around risk management increased after the implementation of guidelines. For example, 79% carriers were advised to undergo risk reducing bilateral mastectomy and 91% after the implementation of the guidelines ( $p = 0.016$ ). During the interview majority of participants confirmed that they were following one or other risk reducing advice. For Lynch Syndrome there was poor documentation of risk reducing advice in the files and this did not show any improvements after the implementation of the guidelines. The documentation of some risk reducing advice such as subtotal colectomy was as low as 12%. During interviews 87% of patients confirmed that they were having colonoscopies. Twenty four percent patients were taking aspirin as risk reducing medicine.

**Discussion or Conclusions:** The study provides the basis for the development of interventions to address non-adherence to risk reducing guidelines.

### 459 | An Evaluation of Qualitative Rigour in Oncology Mixed Methods Randomized Controlled Trials

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**Background/rationale or Objectives/purpose:** Objectives/purpose: Qualitative research is increasingly being integrated within RCTs in order to investigate patient centered outcomes. This review aimed to understand how qualitative research is being utilized and reported in oncology RCTs.

**Methodology or Methods:** Methods: MEDLINE and CINAHL were searched to identify reports of qualitative studies associated with RCTs evaluating interventions related to cancer care published between 2008 and 2018. Reports were systematically reviewed using a data extraction tool designed to evaluate the rigour of the qualitative component, integration into the RCT, and the overall reporting of the qualitative component.

**Impact on practice or Results:** Results: Thirty-six articles were identified for inclusion in this review. Twenty-seven of these were reports from studies evaluating interventions related to information/education, diet/exercise, or psycho-therapeutic interventions. Qualitative methods focused mostly on gaining insight into the experience of receiving the intervention or participating in study procedures. Some reports included insufficient information to understand how the qualitative component fit with the quantitative RCT component. Integration between the RCTs and associated qualitative inquiry was limited in terms of study design and interpretation of results.

**Discussion or Conclusions:** Conclusions: Incorporating qualitative approaches with RCTs in the cancer context is a challenging undertaking. No clearly established guidelines exist to guide study design or reporting. Investigators are encouraged to carefully plan how to integrate the RCT and qualitative components, both in the design and reporting of findings, in order to take full advantage of this powerful research strategy.

### 436 | Preferences of young adult cancer patients for communication when receiving bad news

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**Background/rationale or Objectives/purpose:** Young adult patients want more information about their own life-threatening illness or a hypothetical life-threatening illness (Lyon et al., 2004). The survey tar-



getting cancer patients has shown that age was related to preferences for communication (Fujimori et al., 2007). However, there are few studies that investigate the preferences of young adult cancer patients for communication when receiving bad news. The objective of this study is to clarify the preferences of young adult cancer patients for communication when receiving bad news.

**Methodology or Methods:** An online survey was conducted. The survey included 95 questions about preferences for communication when receiving bad news based on previous study. The descriptive analysis was conducted.

**Impact on practice or Results:** Two hundred six participants (26 male, 180 female) completed the survey. The mean age was 33.7 (SD: 4.3, range: 20–39). Types of cancer were as follows; uterine, 84 (40.8%), breast, 25 (12.1%), thyroid, 23 (11.2%). Participants with recurrence/ metastasis were 15 (7.3%). Participants strongly preferred their physicians to discuss future treatment plans (91%), to answer their questions (90%), and to discuss all treatment methods that they can use (89%). Participants did not prefer their physicians to communicate vaguely (5%), to convey only bad news (9%), and to respond with an irritated (11%).

**Discussion or Conclusions:** It was suggested that the young adult cancer patients wanted to discuss clearly about treatment. Future research needs to consider effective approaches to achieve preferred communication between young adult cancer patients and physicians.

#### 420 | Engaging older adults living with cancer and multimorbidity and their carers: Setting research priorities together for patient-centered care

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**Background/rationale or Objectives/purpose:** Older adults with cancer and multimorbidity have complex needs and represent a growing proportion of those with cancer. This is also a 'hard to reach population' as the burdens of cancer in addition to age-related changes may complicate participation in patient-oriented research. The purpose of this presentation is to share results from a public meeting where we brought together a group of older adults with cancer and their carers to discuss research priorities for older adults with cancer and multimorbidity and their participation in research.

**Methodology or Methods:** We conducted a public meeting with older adults living with cancer and multimorbidity and their carers (n = 20) who were invited to set priorities for research and to discuss their interest in research engagement. We audio-recorded the public meetings, maintained notes of recurrent themes and ideas, took photos of important artifacts (i.e. white board and flip chart notes), and conducted a post-meeting evaluation and follow-up via telephone. Data were analyzed using thematic and descriptive analysis.

**Impact on practice or Results:** Preliminary results demonstrate that older adults with cancer are interested in being engaged in research and are open to sharing their perspectives but express hesitations due to lack of experience and concerns related to involvement (i.e. travel). Key priorities for research center on improving the patient experience and addressing system-related challenges to improve care.

**Discussion or Conclusions:** Older adults living with cancer and multimorbidity express interest in participating in research. If we can address barriers to participation, we can capitalize on important opportunities to work together to improve care.

#### 405 | A New International Initiative to Harmonize Analysis of Cancer Patient-Reported Outcomes

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*Hans-Henning Flechtner<sup>10</sup>, Ingolf Griesch<sup>11</sup>, Mogens Groenwold<sup>12</sup>, Laura Lee Johnson<sup>13</sup>, Madeleine King<sup>14</sup>, Paul Kluetz<sup>13</sup>, Michael Koller<sup>15</sup>, Daniel C Malone<sup>16</sup>, Francesca Martinelli<sup>2</sup>, Sandra A Mitchell<sup>17</sup>, Jammbe Z Musoro<sup>2</sup>, Daniel O'Connor<sup>18</sup>, Kathy Oliver<sup>19</sup>, Elisabeth Piau-Louis<sup>20</sup>, Martine Piccart<sup>21</sup>, Chantal Quinten<sup>22</sup>, Jaap C Reijneveld<sup>23</sup>, Christoph Schürmann<sup>24</sup>, Jeff Sloan<sup>25</sup>, Ashley Wilder Smith<sup>17</sup>, Katherine M Soltys<sup>26</sup>, Rajeshwari Sridhara<sup>13</sup>, Martin Taphoorn<sup>27</sup>, Galina Velikova<sup>28</sup>, Andrew Bottomley<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Patient-reported outcomes (PROs) are increasingly identified as important data to inform risks and benefits of cancer treatments. However, current inconsistency in defining, analyzing and interpreting PRO endpoints impedes their use and comparison of results across RCTs. Therefore, an international collaboration was formed: the Setting International Standards in Analyzing Patient-Reported Outcomes and Quality of Life Endpoints Data (SISAQOL) Consortium.

**Methodology or Methods:** SISAQOL activities include face-to-face meetings, conference calls, email communications, surveys using a modified Delphi process, and formation of subgroups to focus on specific issues.

**Impact on practice or Results:** SISAQOL started with an initial group of experts who recommended enlarging the membership to ensure that its international and multidisciplinary scope included leading

PRO researchers and statisticians, experts from international oncologic and academic societies, advisory and regulatory bodies, pharmaceutical industry, cancer institutes, and patient advocacy organizations. The group identified the lack of common definitions for many concepts and techniques used in PRO analysis. Subgroups worked to define PRO terms and research objectives and matched them with appropriate statistical methods, and explored approaches to analyzing missing data. Development of consensus recommendations for PRO analysis in cancer RCTs is in progress.

**Discussion or Conclusions:** The SISAQOL Consortium uses a participatory group process that builds on the needs, knowledge and expertise of diverse stakeholders with the goal of developing robust standards for PRO analysis in cancer RCTs. Including PROs in RCTs costs time, money and/or effort from all stakeholders, including patients. Harmonizing the analysis of these data will enhance their interpretability and impact.

This publication reflects solely the views of the individual authors.

### 396 | Memory for a cancer consultation; an experimental investigation of memory accuracy in recall of a Malignant Melanoma diagnosis

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**Background/rationale or Objectives/purpose:** Cancer patients encounter a wealth of clinical information during diagnosis. We have evidence that patients struggle to remember information, but limited understanding of what is more or less easily remembered and what factors affect successful remembering. Understanding memory processes may help us to develop patient strategies to remain better informed in clinical settings.

This exploratory study aimed to understand memory for a cancer diagnosis, specifically whether accuracy differs when recalling different information (for instance, the diagnosis details vs the prognosis) and as a function of individual differences (e.g. age, current mood, health beliefs).

**Methodology or Methods:** A non-clinical sample of 136 participants (mean age = 36 years, SD = 13.85 years,  $n_{\text{female}} = 96$ ) watched a video consultation of a malignant melanoma diagnosis constructed according to UK clinical quality standards for information provision. Participants recalled the diagnosis information in an online free text form and completed measures of their health beliefs and demographic background. A coding system was developed to measure accuracy of recall which examined information in the domains of diagnosis, prognosis, treatment, risks, and clinician's advice.

**Impact on practice or Results:** Overall recall accuracy was 16.09%. People most poorly remembered the diagnosis (12% recall) and most accurately remembered prognosis information (38% recall). Bayesian models examined the effects of individuals differences on recall accuracy. Age, mood, and health beliefs showed negligible influence on accurate recall.

**Discussion or Conclusions:** In our experimental analogue study a very low level of recall was observed. This spurs a need to further research cancer information delivery.

### 363 | Predictive trajectories of recovery after Robot-Assisted Radical Prostatectomy (RARP)

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**Background/rationale or Objectives/purpose:** Despite all advancements in prostate cancer treatments, sexual and urinary dysfunctions are the most common functional consequences in men undergone Robot-Assisted Radical Prostatectomy (RARP) and they may persist for several years. The aim of the present study was to identify trends of patients' urinary and sexual dysfunctions from a clinical and psychological per-

spective, analyzing whether sociodemographic and medical predictors could affect different one-year longitudinal trajectories.

**Methodology or Methods:** A sample of 478 Italian prostate cancer patients completed the EPIC-26 questionnaire at the pre-hospitalization, 45 days and 3, 6, 9, and 12 months after RARP. The person-oriented approach of Latent Class Growth Analysis (LGCA) was conducted separately for sexual dysfunction and urinary incontinence EPIC-26 subscales. The association between membership in the two longitudinal trajectories of urinary and sexual dysfunctions was assessed by Chi-square test and its related contingency table. Sociodemographic and clinical characteristics (age, BMI, diabetes, nerve-sparing procedure) were analyzed as potential predictors in differentiating among the identified longitudinal trajectories.

**Impact on practice or Results:** Patients showed different trajectories of recovery both in urinary incontinence and in sexual dysfunction. The LGCA identified three and five different initial medical status and trends of recovery in impotence and urine leaking, respectively, that were influenced by clinical and sociodemographic predictors such as age, pre-surgical scores of physical dysfunctions, diabetes and BMI. A great proportion of patients reported both steady problems in sexual function and constant high levels of urinary incontinence over time.

**Discussion or Conclusions:** Identifying different categories of patients at risk and their typical trajectories of recovery may be important prerequisites of a patient-centered care and planned healthcare programs.

### 362 | Male breast cancer patients and their psycho-oncological needs and experiences

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**Background/rationale or Objectives/purpose:** Approximately 1% of breast cancer patients are male (MBCP) and research usually focusses on female breast cancer patients (FBCP). Psycho-oncology structures have been established to particularly address FBCP needs, who still show unmet psychosocial support needs. It is unclear how MBCP perceive psycho-oncological support in these structures. The aim of this study is to investigate MBCPs' psycho-oncological needs and how they perceive psycho-oncological support.

**Methodology or Methods:** The N-MALE study ('Male breast cancer: Patients' needs in prevention, diagnosis, treatment, rehabilitation, and follow-up care') conducted in Germany from 2016 to 2018 investigated MBCPs' experiences and their medical and psychosocial needs during their cancer journey. Patients were recruited via hospitals, self-help groups and public calls in the media. Within this study semi structured interviews (N = 27) were conducted and analyzed using summary qualitative content analysis.

**Impact on practice or Results:** MBCP mean age was 64,8 years, 79,2% were living with a partner, for 96% it was their initial diagnosis. Preliminary findings based on the interviews with MBCP show that men perceive psycho-oncological support differently. There are identifiable patterns that psycho-oncological treatment was rejected because of personal support systems or coping strategies as well as accepted and beneficial towards coping with the disease. Finding a good fit of a psycho-oncologist was important.

**Discussion or Conclusions:** Preliminary findings show that MBCP perceive psycho-oncological support differently and should be offered more than once. Partners and family members of MBCP should be offered psychological support as well.

### **293 | Exploring healthcare professionals' communication with cancer patients parenting minor children: A qualitative study of identifying barriers, experiences and attitudes**

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**Background/rationale or Objectives/purpose:** Approximately 12–35% of cancer patients are parenting minor children. Healthcare professionals (HCPs) play a central role in addressing and identifying needs of patients parenting children. Previous research has shown that HCPs rarely address these needs spontaneously and that they feel insufficiently trained to provide adequate psychosocial support to their patients. So far, little research on child- and family related communication has been conducted. This study explored HCPs' communication with patients parenting children, their experiences and attitudes.

**Methodology or Methods:** Semi-structured interviews were conducted, audio-recorded, transcribed and analyzed using conventional content analysis and descriptive statistics.

**Impact on practice or Results:** N = 20 interviews with different HCPs were conducted. Analyses focused on HCPs' daily practice in addressing and identifying cancer patients parenting minor children and consequently their child- and family-related needs. Current communication of HCPs varies greatly between HCPs and the setting. Some HCPs routinely ask patients at diagnosis if they have minor children and refer to special child- and family services. Others only address the topic if brought up by the patient or only during later stages of cancer treatment e.g. during palliative care. Barriers to addressing parent specific needs were time constraints or healthcare structures and lack of knowledge. Facilitators were HCPs' dedication and empathy towards patients' situation.

**Discussion or Conclusions:** Results show that many HCPs are lacking knowledge and skills to communicate effectively with patients about their children and to identify and address their needs as parents. Hence, this study supports the need to develop a communication training addressing child- and family-related aspects in patient-centered cancer care.

### **262 | Understanding Compassionate Care from the Patient Perspective**

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**Background/rationale or Objectives/purpose:** Compassionate care includes recognition, empathic understanding, and emotional resonance with distress or suffering of others, coupled with motivation and relational action to help. It is shown to improve quality of life in cancer, but many patients feel they do not receive compassionate care. This study seeks to understand patient perception of compassionate care.

**Methodology or Methods:** 98 ambulatory patients were recruited while on active Head and Neck Cancer treatment at the Odette Cancer Centre, Toronto. Semi-structured qualitative interviews were conducted by phone 1 month post-recruitment. Answers were manually recorded. Preliminary qualitative analysis was conducted (n = 85).

**Impact on practice or Results:** Thematic analysis resulted in 18 codes, which were organized into 6 categories and further collapsed into 3 overarching themes: Feeling Cared For By Healthcare Practitioners (HCP), Emotional Support and Nature of Patient-HCP Interaction. The latter was the most prevalent theme and characterized the patient idea of being "treated like a person, not a number." Patients highlighted HCPs' demeanour, including tone of voice, and valued honesty, patience, sensitivity, eye contact, and use of layman language. Patients emphasized the importance of their HCP communicating with each other, communicating realistic expectations for the course of treatment to patients and comprehensive explanation of prognosis.

**Discussion or Conclusions:** Compassionate care and effective communication between patients and their providers has been shown to improve the health outcomes of individuals living with cancer. The results presented here provide insight into the patient perspective of compassionate care, and can be used to inform education of HCP and create guidelines for improvement of person-centered care.

### **250 | Where do oncology patients in the Czech Republic expect support with fulfillment of their psychosocial needs and what is the current reality?: A mixed-method study**

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**Background/rationale or Objectives/purpose:** In line with our previous research assessing the needs of oncology patients in the Czech Republic, this study, first of its kind in the Czech Republic, focuses on where patients expect to find support with fulfillment of their psychosocial needs and where they actually get it. Our aim is to unravel the perspective of oncology patients on this topic in the Czech Republic.

**Methodology or Methods:** The research design consisted of a qualitative (1) and quantitative (2) phase. In the first phase, two focus groups, separately men and women of various diagnoses, examined expected and actual sources of support. The second phase consisted of online questionnaire with 17 previously identified psychosocial needs distributed principally via patient organizations.

**Impact on practice or Results:** In total, 250 patients responded, of which 80% were women, and 26% were currently undergoing treatment.

Regarding psychosocial needs patients often expect and get support from their partners, themselves, friends and children.

However, there was considerable discrepancy between the expected and actual sources of support of which the most frequent were found at oncologists, GPs, Social Security Administration, and health insurance companies. Patients often turn to those instances for social/legal needs, however, patients also expect oncologists to provide psychosocial support.

**Discussion or Conclusions:** This research sheds light on the discrepancy between expectations of patients and the reality regarding fulfillment of principally social/legal needs. Additionally, there is confusion about where to turn for what type of support.

### **236 | Factors and processes in mobilising network support for younger women around breast cancer diagnosis**

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**Background/rationale or Objectives/purpose:** There is acknowledgment that social support plays a key role in the quality of life and illness management of cancer survivors. There is little understanding of the factors and processes associated with mobilising network support around around time of diagnosis.



**Methodology or Methods:** This paper reports on baseline findings from a prospective cohort of 888 younger women with breast cancer in the UK. Descriptive, univariate and multivariate regression analyses explores associations between respondent, network, network member level characteristics and self-management support.

**Impact on practice or Results:** Social network members provide a substantial level of support soon after diagnosis. However, respondents with higher socio-economic status draw less on network resources and support than respondents of low socio-economic status. While partners and close family provide most support, the level of such support is relatively fixed. Support provided by non-family is highly responsive to individual circumstances and needs. Networks that include a partner and those that do not tend to mobilise different types of non-family network members for each type of support (illness, practical, emotional). Acquaintances and hobby groups are the network ties that carry the highest potential for increasing support in networks that do not include a partner.

**Discussion or Conclusions:** A network perspective can help tailor support for people with breast cancer. This analysis indicates that the level of burnout of the informal labour force of people of low socio-economic status is likely to be high during and after treatment, and offers plausible pathways for mobilising network support. Further analysis will look at network support changes along the illness trajectory.

## 214 | Participation of patients with breast and gynecological cancer in multidisciplinary tumor conferences: The providers' perception of the patients' emotional experiences

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**Background/rationale or Objectives/purpose:** In some breast cancer centers in Germany, patients participate in multidisciplinary tumor conferences (MTCs) during the discussion of their own case. Only a few studies have been conducted on this topic. Little is known about the experiences the providers make during patient participation and how they estimate the patients' emotional reactions during participation. Therefore, this study demonstrates the providers' perception of how patients experience their participation on an emotional level.

**Methodology or Methods:** In this study  $n = 32$  semi-structured interviews with  $n = 32$  providers in  $n = 7$  breast cancer centers in North Rhine-Westphalia, Germany, were conducted. One-half of the providers ( $n = 16$ ) had no experience and the other half ( $n = 16$ ) had experiences with patient participation in MTC. The interviews were audiotaped, transcribed and content analysis was performed.

**Impact on practice or Results:** The results show a mixed picture of experienced and expected emotional reactions. The providers who had experiences with patient participation mentioned mostly positive emotional experiences, for example, the feeling of being 'calmed' and 'relieved' but also negative emotional reactions such as 'emotional overload' and 'stress'. The providers who had no experiences with patient participation mostly suspected negative emotional reactions by patients such as 'fear' and 'distrust in the providers', but they also assume positive emotional reactions like feeling 'more informed'.

**Discussion or Conclusions:** The mixed results of the expected and experienced patient experiences do not indicate exclusive benefits from participation in a MTC for patients. Further research on advantages and disadvantages for patients and also on the feasibility from the providers' perspective is necessary and will be investigated within the PIN-TU project.

## 191 | Cancer, care and children. How do parents with cancer experience the communication of healthcare professionals regarding family- and child-related issues? A qualitative study

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**Background/rationale or Objectives/purpose:** Cancer patients with minor children experience particular burden and strains. Being patient and parent at the same time is associated with specific needs of support. Therefore, the communication of child- and family-related issues plays an important role in patient care. This study aims to explore the burden and needs of affected parents and their experiences regarding the communication with healthcare professionals (HCPs).

**Methodology or Methods:** We conducted semi-structured interviews with 18 parents diagnosed with cancer. The interviews were audio-recorded and transcribed verbatim. Data was analyzed by applying thematic analysis.

**Impact on practice or Results:** Parents worry about how to inform their children about the disease and how those are affected. Common resources are social support of family and friends, open inner-family communication and the use of psychosocial support. From the parental view, empathy and communication-skills are the most relevant competencies in HCPs: HCPs should learn to think from the patient's perspective and understand that being a parent is an essential part of the patient's self. HCPs also ought to take the patient seriously and choose their words carefully. As most relevant topics to be addressed in a HCP-training on parental cancer, participants recommended: a) performing holistic health care, b) communication, c) change of perspective and d) age-appropriate information for children.

**Discussion or Conclusions:** Our findings emphasize the essential role of empathic patient communication. HCPs should integrate child- and family-related topics in their care for patients with minor children and address the family status, age-related reactions of children and how the family handles the situation.

## 182 | Sexual Distress Scale: A New Measure to Assess Sexual Distress in Men with Prostate Cancer

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**Background/rationale or Objectives/purpose:** Sexual distress is an important variable in the context of prostate cancer (PCa), because it is a necessary criterion for the diagnosis of sexual dysfunction and a strong indicator of well-being and quality of life. Most of the existing measures to assess sexual distress in PCa have several problems and limitations. This research presents results on a series of studies aimed at validating a new measure to assess sexual distress in men with PCa, the Sexual Distress Scale (SDS).

**Methodology or Methods:** Three different studies using independent samples were conducted to validate the SDS in men with PCa. Participants completed online surveys that included the SDS and measures of sexual function, sexual satisfaction, sexual attitudes, mood, and relationship satisfaction.

**Impact on practice or Results:** To this date, two versions of the SDS are available: a 12-item SDS and a 5-item SDS-SF (short form). Both versions assess sexual distress independent of sexual function, have excellent psychometric properties, and overcome limitations of other sexual distress measures.

**Discussion or Conclusions:** The SDS and SDS-SF are two new viable alternatives for the assessment of sexual distress in men with PCa. Because of their brevity (especially the SDS-SF), they are of particular interest in applied research and clinical settings. In less than 2 minutes researchers and clinicians can obtain an accurate assessment of sexual

al distress. These measures are thus usable as part of routine care; in assessment batteries pre- and post-treatment; or in addition to sexual function measures to confirm the presence of sexual dysfunction.

### 163 | Consumer perspectives on collecting Patient Reported Outcomes among women with breast cancer

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**Background/rationale or Objectives/purpose:** Consumer receptiveness is important for successful implementation of Patient Reported Outcome Measures (PROMs). This study aimed to ascertain Australian women's perspectives regarding two separate PROMs surveys. We hypothesised that consumers would be engaged in PROMs assessment, and responses would not vary according to the different survey types.

**Methodology or Methods:** A non-representative sample of women (aged 18+ years) diagnosed with breast cancer (within 5 years) were recruited through online promotion from June-September 2018, and randomly allocated to complete one of two online surveys: i) Minimum set: recommended by International Consortium for Health Outcomes Measurement (ICHOM)(110–112 items), or ii) Extended set: As above, with additional psychosocial measures (218–230 items). Participants were asked follow-up questions regarding perceptions of the survey, and for written feedback (optional).

**Impact on practice or Results:** Of those who screened, 77% (n = 200) had 95% complete data (n<sub>min set</sub> = 81; n<sub>ext set</sub> = 119). Perceptions were high (80–100%) regarding time burden, ease of completion, comprehensible, appropriateness and willingness to participate again, and moderately-high (67–74%) regarding willingness to answer more questions, overall satisfaction and relevance. There was some recognition of survey content gaps (46%) with qualitative feedback indicating financial/work-related issues, satisfaction with information and care, and emotional well-being and support (minimum set only). Bivariate analyses indicated few significant differences in responses/perceptions according to socio-demographics, treatment and diagnostic factors, and survey group, providing support for our hypothesis.

**Discussion or Conclusions:** Results provide preliminary indications of high acceptance and receptiveness to PROMs collection among a sample of women with breast cancer, but requires initial monitoring of consumers' response and engagement upon implementation.

### 131 | Change on Quality of Life and its Predictors on Head and Neck Cancer Patients with Concurrent Chemoradiotherapy

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**Background/rationale or Objectives/purpose:** Background/ Purpose: Most studies on frailty mainly focus on healthy elderly people or elderly patients with cancer, and the relationship between frailty and QOL in patients with head and neck cancer has never been investigated. Therefore, the author's motivation to conduct this study was triggered.

**Methodology or Methods:** Methods: We conducted a longitudinal study to investigate the effect of frailty of patients with head and neck cancer receiving CCRT on the change in QOL. Data was collected from 302 patients newly diagnosed with head and neck cancer receiving CCRT, including (1) basic demographic data, (2) G8 frailty assessment, and (3) EORTC QLQ-H&N 35.

**Impact on practice or Results:** Results: We found that (1) the level of change in saliva viscosity and senses in subjects "who were older" was

smaller; (2) the level of change in insight in patients "who were younger" was larger; (3) the level of change in saliva viscosity, senses, and swallowing in patients "who did not receive nasogastric tube feeding" was larger; (4) the level of change in the post-treatment pain, swallowing, senses, social interaction & diet, sexual life, mouth opening, dry mouth, saliva viscosity, and insight in patients who did not experience pre-treatment frailty was larger.

**Discussion or Conclusions:** Conclusions: Half patients with head and neck cancer experience frailty before receiving CCRT. It affects the change in QOL of patients. Health care providers are advised to screen whether patients are experiencing frailty before administering CCRT.

### 107 | Psychosocial adjustment during hospitalization of patients undergoing hematopoietic stem cell transplantation (HSCT): The role of transactional processes and sociopsychological variables

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**Background/rationale or Objectives/purpose:** The period of HSCT hospitalization can enhance psychological distress and reduce quality of life. In addition, patients have sometimes to deal with social isolation. The first objective was to examine the relationships between perceived stress, control, social support and psychological adjustment during hospitalization. A second objective was to evaluate the role of protective and deleterious sociopsychological factors on this adaptation process.

**Methodology or Methods:** 114 patients (Mâge = 51.46) completed two questionnaires: one 15 days before hospitalization and one during the first week of hospitalization. Protective (e.g. optimism, positive affectivity, quality of life) and deleterious variables (e.g. neuroticism, alexithymia, experiential avoidance, negative affectivity, anxiety and depression) were assessed in the first questionnaire. Perceived stress, control, social support and coping strategies were assessed during hospitalization.

**Impact on practice or Results:** A series of regression analyses revealed that dysfunctional coping strategies were significantly predicted by perceived stress, lack of both perceived control and social support. Fighting spirit was robustly predicted by both quality of life and optimism. Physical quality of life, negative affectivity and anxiety emerged as predictors of perceived stress, while the lack of perceived control was predicted by both experiential avoidance and alexithymia.

**Discussion or Conclusions:** Consistent with literature, transactional factors significantly impair adjustment during HCT hospitalization. Several dispositional psychological factors also play a role in this adaptation process. While perceived stress and control were robustly predicted by deleterious dispositional variables, functional adjustment was robustly related only to protective factors. These results highlight the importance of focusing interventions on the reduction of disruptive factors, but also on the promotion of protective ones.

### 106 | Protective and deleterious sociopsychological factors involved in the mental health of patients prior to hospitalization for hematopoietic stem cell transplantation

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#### Background/rationale or Objectives/purpose:

Pre-graft, hospitalization and post-graft period are source of psychological distress and impair quality of life. One purpose of our study was to examine the relationships between protective/deleterious psychological factors and mental health ((quality of life, depression and anxiety) before the hospitalisation.

**Methodology or Methods:** 129 patients (Mâge = 51.46) completed a questionnaire 15 days before an allograft. Supposed protective factors such mindfulness, positive affectivity, optimism, authentic-durable happiness and deleterious factors such neuroticism, experiential avoidance or negative affectivity have been assessed. Our dependant variables were depression, anxiety (HAD) and mental & social quality of life (SF-12).

**Impact on practice or Results:** In the sample, 56.5 % of patients were characterised by an impaired quality of life. In addition, 59.3% had an anxiety level above the normal and 21.1% a level of depression above the normal (i.e. a score above 7 on the HAD scale). A series of regression analysis revealed that the best predictors of quality of life were depression and happiness. Depression was significantly and robustly related to both positive affectivity and anxiety. Controlling for both depression and neuroticism, experiential avoidance emerged as robust predictor of anxiety, while optimism was found to predict happiness.

**Discussion or Conclusions:** Psychological distress and impaired quality of life are well highlighted in this study. Also, impairments of protective factors (positive affectivity, optimism and happiness) as much as negative factors (depression, anxiety, neuroticism and experiential avoidance) significantly predict a poor quality of life. These results reveal the importance to reduce the psychological distress among this population by both promoting protective factors and alleviating negative ones.

### 81 | Recommendations to Improve the Lived Experience of Early Stage and Metastatic Breast Cancer Patients in Canada

*Rebecca Armstrong<sup>1</sup>, Jenn Gordon<sup>1</sup>, Laurie Kingston<sup>1</sup>, Wendy Panagopoulos<sup>2</sup>, Cathy Ammendolea<sup>3</sup>, Diana Ermel<sup>4</sup>, Niya Chari<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** The purpose of these surveys was to capture the lived experience of Canadians who have received a breast cancer diagnosis and the entire spectrum of this experience, from detection through to survivorship or living with metastatic breast cancer.

**Methodology or Methods:** The data from this research was compiled from a 2017 survey that consisted of 278 Canadians who had received a stage I, II or III breast cancer diagnosis and 180 Canadians who had received a metastatic breast cancer diagnosis.

**Impact on practice or Results:** The survey data shows that while patients feel supported in certain areas, there are still significant opportunities for improvement. CBCN has identified five overarching factors that could greatly improve health outcomes and the quality of life:

Improved Educational Resources: specific resources for newly diagnosed mBC patients; financial resources; treatment timelines and expectations; information on dying-well.

Increased Access to Treatments: shortening the drug approval process time, increase equitable access to new medications.

Increased Access to Information: including breast density, palliative care options and information around clinical trials.

Integrated Systemic Supports: including patient navigation, communication tools to support general practitioners, access to psychosocial professionals.

Increased Awareness and Understanding of Metastatic Breast Cancer: including accurate statistics.

**Discussion or Conclusions:** Quality of life and health outcomes for breast cancer patients in Canada can be improved through collectively addressing the five overarching factors identified through this survey.

### 79 | Title: Focus on non-adherence: a qualitative study aiming to investigate perceptions associated to adjuvant endocrine therapy in premenopausal patients with breast cancer and their health care providers

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**Background/rationale or Objectives/purpose:** Objectives: The main objective of this study is to investigate breast cancer (BC) patient's perceptions about Endocrine Therapy (ET). Secondary objectives are: (1): to capture potential gaps between their perceptions and the representations of their health care providers; (2): to explore preferences in patients regarding programs aimed to improve adherence to ET.

**Methodology or Methods:** Methods: We conducted separately focus groups on patients and on health care providers to capture a multilevel framework regarding non-adherence. The discussion schedule was non-directive and elaborated to facilitate the speech. Discussions were audio recorded, anonymized and transcribed verbatim. We used a thematic analysis approach (Thomas, 2006) to identify patterns and themes.

**Impact on practice or Results:** Results: Only the emergent themes in patient focus groups are presented here. Five inter-related major themes were identified (1) A multidimensional burden related to ET; (2) Painful concerns about their fertility; (3) Strategies to cope with persistent side effects of the cancer treatments, including ET; (4) A critical need of autonomy, intertwined with a strong call of understanding addressed to their oncologist and related to their burden; (5) Insights on interventions dedicated to improve ET adherence.

**Discussion or Conclusions:** Conclusions: While quantitative results showed associations between pain, fatigue, gynecological symptoms and poor adherence to ET, the present qualitative findings offer insights in the understanding of the daily unfolding of these symptoms; these results help us understand why this burden they associate with adjuvant ET is so prominent and leads to non-adherence. Motivational interview techniques as well as Activation and Acceptance Therapy strategies could indeed ground these programs.

### 53 | Healing with a heartbeat. The physiological underpinnings of doctor-patient communication in oncology

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**Background/rationale or Objectives/purpose:** The patient-physician interaction is a relational process of constant and mutual influence at the psychological and biological level.

Synchrony in autonomic nervous system activity (e.g., heart rate variability, HRV) has been observed in close dyads and may also occur between patient and provider during medical consultation. This mutual interaction may be related to empathy, which has been associated with favourable outcomes for both patient and physician.

The aim of this study is to investigate the impact of oncologist's empathic attitude toward the patient and his/her autonomic regulation.



Moreover, this research should examine if such an empathic relationship is related to physiological synchrony between patient and physician during a follow-up consultation in oncology.

**Methodology or Methods:** Cancer outpatients ( $n = 150$ ) and oncologists ( $n = 15$ ) were recruited within the Oncology division at the University Clinic in Graz, Austria. Patients' perception of doctors' empathic attitude was evaluated as well as a simultaneous assessment of HRV during a consultation. Dyadic growth curve modelling will be applied to examine physiological synchrony during the consultation.

**Impact on practice or Results:** Preliminary results will be reported at the IPOS 2019.

**Discussion or Conclusions:** Medical empathy may benefit cancer patients and their health care providers. Therefore, exploring the physiological underpinnings of the doctor-patient relationship might inform about the mechanisms of autonomic co-regulation and its implications for oncology.

Furthermore, the knowledge about empathy and physiological synchrony in medical consultation could constitute an important element of training in doctor-patient communication.

Further research should encompass the impact of medical empathy and its physiological substrates on cancer patients coping strategies, adaptation and survival.

## N. PRIMARY, SECONDARY AND TERTIARY CANCER PREVENTION

### 647 | Validation of the Informed Choice instrument for Chilean women facing a mammography decision in primary care

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**Background/rationale or Objectives/purpose:** Breast cancer is a major public health problem in Chile. Mammography are available for all women, however, 30% decide not to take it. Reasons include lack of knowledge about the exam, and fear of the results. The study objective was to adapt and validate for the Chilean context the instrument Informed Choice (IC), to measure informed decision for mammography. Original IC is in English, consisting of 6 items.

**Methodology or Methods:** Cross-sectional validation study of IC. Following international standards, we: 1) translated and back-translated IC by two independent researchers; 2) conducted a focus group with primary care users for cultural/linguistic relevance; 3) experts reviewed content validity; 4) piloted the instrument. Finally, we conducted a validation study with women aged to receive a mammography. Internal consistency was assessed by Cronbach alpha. Factor analysis was performed.

**Impact on practice or Results:** The translated IC (version-1) was presented to women in a focus group. Items were discussed regarding phrasing and easier wording (version-2). Three experts proposed small changes on wording (version-3). Version-3 was piloted with 10 women with no issues identified. Validation was conducted in a sample of 70 women. Mean age was 54,4 (SD 3,1), 39% had completed secondary school. Most have had a mammography (92%). Initial Cronbach Alpha was 0,76. After factor analysis item 1 was removed and the final Cronbach Alpha was 0,78.

**Discussion or Conclusions:** The Chilean IC instrument is reliable to measure informed choice for mammography. Further studies should consider using IC immediately after women are offered mammograms to evaluate knowledge, attitude and intention towards the screening.

### 581 | Cancer education and awareness in limited resources settings for cancer patients and caregivers

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**Background/rationale or Objectives/purpose:** Cancer patients are increasing rapidly, creating a burden not only for cancer patients and caregivers, but also for health care systems. Providing information and orientation to cancer patients and caregivers regarding diagnosis, treatment and compliance, are essential and important. Often, patients and caregivers who might require instruction and education about their illness are overlooked and left uninformed, frightened and confused about their treatment and future.

**Methodology or Methods:** Working in partnership with local and international cancer control experts, health ministries, clinicians, advocates and caregivers to build and introduce a program consisting of 3 components; patient/caregiver information/navigation support, at 5 sites in Colombia and Vietnam from 2018 to 2019.

Part 1: We undertook a qualitative study to determine what knowledge, regarding cancer and its treatment, were concerns of patients via in-person interviews with patients, caregivers, and healthcare workers.

Part 2: Film of a series of short videos providing culturally and resource appropriate information about cancer-based on the information derived from the interview/assessments.

Part 3: Establishment of a resource map providing local information and resources on affordable lodging, food, and transportation services.

**Impact on practice or Results:** Part 1: Results from 4 provinces of Vietnam include to Hanoi, Ho Chi Minh City, Da Nang and Can Tho indicated patients and caregiver lacked knowledge in the areas of diagnosis, treatment, and palliative care.

Part 2: Based on this information, we developed scripts and filmed a pilot series of videos providing content based on the identified informational needs and gaps.

Part 3: The project will officially launch in September of 2019. At that time, we will assess pre-and post-launch to determine the efficacy of the program and provide feedback for its refinement.

**Discussion or Conclusions: Expected clinical implications:** Increase patients' and caregivers' knowledge of cancer and treatment; Improve patient's and caregiver's satisfaction with the quality of care; Improve patients' treatment compliance; Reduce patients' and caregivers' levels of distress; Reduce hospital staff's burden.

### 477 | Implementing the Standard of Care: Innovation in Community-Based Screening for Cancer-Related Distress across Populations

Kevin Stein, Melissa Miller, Susan Ash-Lee, Sara Goldberger, Shauna McManus, Alexandra Zaleta  
Cancer Support Community, Philadelphia, USA

**Background/rationale or Objectives/purpose:** Since 2008, Cancer Support Community (CSC) has been investigating the feasibility and effectiveness of screening, referral and follow-up for cancer-related distress and unmet needs through the development, validation, and application of the CancerSupportSource<sup>®</sup> (CSS) program, including psychometrically validated instruments and automated referral systems. In addition to a patient version, the program has also been adapted for use with cancer caregivers (CSS-CG), and pediatric oncology patients (CSS-PEDs).

**Methodology or Methods:** The CSS instrument for patients is offered in 25 and 15-item forms, including a Spanish-language adaptation. Participants rate their level of concern (0–4). CSS allows for easy identification of respondents' top concerns and includes subscales that can identify individuals at risk for clinically significant levels of depression and anxiety. The CSS-CG tool includes 33 items assessing emotional well-being, self-care, caregiving tasks, and patient well-being. The

CSS-PEDs is under development in partnership with the National Cancer Institute and is undergoing feasibility testing.

**Impact on practice or Results:** CSS is a valid, flexible program that, when fully implemented, automatically generates reports for clinicians and respondents that include tailored information based on respondents' identified concerns. The web-based platform allows for flexibility with secured data management to ensure HIPAA compliance and integration into electronic medical records.

**Discussion or Conclusions:** The screening, referral, and management of distress and unmet needs in the cancer context is an integral part of quality cancer care. This presentation will highlight the development and application of distress screening at the community level. Future research will document the impact of screening for distress on psychosocial, clinical, and cost of care outcomes.

### 304 | Women's decisions about breast cancer risk management following BRCA1 testing

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**Background/rationale or Objectives/purpose:** Women who undertake genetic testing for BRCA1 mutations and receive a positive diagnosis confront difficult decisions about how to best manage their increased lifetime risk of developing breast cancer. These decisions can impact their emotional, physical, and social functioning. This systematic review evaluated the existing research on the decisions that BRCA1 positive women make and influencing factors in order to support women with BRCA1 related decisions.

**Methodology or Methods:** An electronic search of the CINAHL, Embase, PsycINFO, and PubMed databases was conducted to identify studies examining BRCA1 positive women's intentions and decision-making post-genetic testing. 26 studies, 8 qualitative and 18 quantitative, met the inclusion criteria.

**Impact on practice or Results:** The review identified the following areas as influencing factors on women's decisions: (1) personal factors: age, timing of childbearing and family cancer history, (2) social context factors: significant others (family and friends), (3) psychosocial factors: perception of risk, cancer related distress and body image, (4) external factors: information (decision aids and educational-support groups), and availability and access to services. Across all 26 studies, women's age and their family history of breast cancer were consistent influences on women's intentions and decision-making about their risk reduction choices.

**Discussion or Conclusions:** This study summarises the factors that influence decisions that follow testing positive for BRCA-1. This information can be used to inform BRCA1 positive women, genetic counsellors and or medical professionals of issues that should be considered when deciding how to manage their risk of breast cancer.

### 290 | Continued smoking after a cancer diagnosis: A longitudinal study of intentions and attempts to quit

Christine Paul<sup>1</sup>, Flora Tzelepis<sup>1</sup>, Allison Boyes<sup>1</sup>, Catherine DEste<sup>1</sup>, Emma Sherwood<sup>1</sup>, Afaf Girgis<sup>2</sup>

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**Background/rationale or Objectives/purpose:** Continued smoking after a cancer diagnosis is associated with poor treatment outcomes and reduced life expectancy. We aimed to identify the stability of smoking status after diagnosis including quit attempts and quit intentions.

**Methodology or Methods:** Participants with a first primary cancer diagnosis were recruited via two state-based registries in Australia. Surveys were mailed at T1 (6 months post-diagnosis), T2 (1 year), T3 (2 years) and T4 (3.5 years). Smoking status and quitting intentions and behaviours were assessed at each point.

**Impact on practice or Results:** A cohort of 1448 people was recruited. Sixty-six (37%) of the 178 self-reported smokers at diagnosis had quit in the 6 months post-diagnosis and remaining 112 (63%) reported being a current smoker. Of the smokers at T1 40% intended to quit: with 8% having quit smoking by T2; 11% (cumulative) quit by T3; 12% (cumulative) quit by T4. Of the 49 who reported at T1 that they intended to quit in the next 6 months, 10% or fewer reported having quit at any subsequent time point. Quitting attempts decreased in frequency over time post-diagnosis. Less than 15% of respondents who had quit at or shortly before diagnosis reported relapse to smoking at each time point.

**Discussion or Conclusions:** The majority of smokers diagnosed with cancer continue to smoke beyond diagnosis, even in the context of an intention to quit and attempts to do so. Given the substantial rates of continued smoking, understanding smoking behaviours among long-term cancer survivors is important when considering how to design cessation support initiatives for this population.

### 253 | HPV Vaccination to Prevent Cancer: Understanding Canadian Parent's Stage of Decision-Making

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**Background/rationale or Objectives/purpose:** Despite being an effective cancer prevention strategy, human papillomavirus (HPV) vaccine coverage in Canada remains suboptimal. This study is the first to concurrently evaluate HPV vaccine knowledge, attitudes, and the decision-making stage of Canadian parents for their school-aged daughters and sons.

**Methodology or Methods:** Data were collected through an online survey from a nationally representative sample of Canadian parents of 9–16 year old children from August to September 2016. Measures included socio-demographics, validated scales to assess HPV vaccine knowledge and attitudes, and parents' HPV vaccination adoption stage using the Precaution Adoption Process Model (PAPM six stages; unaware, unengaged, undecided, decided not, decided to, or vaccinated).

**Impact on practice or Results:** 3779 parents' survey responses were analysed (1826 parents of sons and 1953 parents of daughters). There was a significant association between child's gender and PAPM stage of decision-making, (p

**Discussion or Conclusions:** Future research should use these findings to investigate theoretically informed interventions to specifically target subsets of the population with particular attention towards addressing knowledge gaps, perceived barriers, and concerns of parents.

### 228 | Understanding the realities and feelings of the human papillomavirus (HPV) vaccine in a border area. Study of the social representation of the human papillomavirus vaccine in Arauca, Colombia

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**Background/rationale or Objectives/purpose:** In 2012 Colombia launched a free HPV vaccination program, yet in 2014 the national vaccination rate dropped from 95% to 14%. This research seeks to understand how the influence of social representations (feelings, thoughts and attitudes) affect how women in Arauca, Colombia decide to get the HPV vaccine – or not. Arauca, one of Colombia's 32 provinces, suffers from the highest rate of mortality by cervical cancer.

Note: This study is part of a project by the Colombian League against Cancer developed with an "HPV Cancer Free" grant from the American Cancer Society and with technical assistance from the University of Johns Hopkins

**Methodology or Methods:** We conducted a qualitative investigation with historic-hermeneutic foundations, and conducted a psychological discourse analysis to make the review. The study utilized focus groups (7 to 10 persons per group) and in-depth interviews with one member of each population (fathers, mothers, vaccinated adolescents, non-vaccinated adolescents, health providers) in three Araucarian towns.

**Impact on practice or Results:** Social representation of HPV vaccine changes according to gender and population groups, but in general, it is associated with lack of information, misperceptions, taboos, fears and a low-risk perception of getting cervical cancer. These perceptions contribute to the diminished rates of HPV vaccination.

**Discussion or Conclusions:** It is necessary to generate a transformation of social representations through the development of a behavior change communication strategy conceived from a biopsychosocial perspective with evidence-based support to educate and sensitize the identified population segments, focuses on the importance of HPV vaccination and the need to vaccinate in schools besides to cervical cancer prevention.

### 170 | The role of health behaviors in the results of surgery the colorectal tumor resection

*Pawel Izdebski<sup>1</sup>, Jaroslaw Ocalewski<sup>1</sup>, Wojciech Zegarski<sup>2</sup>, Michal Jankowski<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Patients' health behaviors before and after surgery the colorectal tumor resection have meaning for its course and the recovery process. Studies show that giving up smoking and no alcohol abuse, regular physical activity, and proper nutrition improve the results of colorectal tumor resection.

The aim of the study was to understand the relationship between health behaviors and the results of colorectal tumor resection. The research was conducted as a part of the grant funded by the National Science Center in Krakow (2017/25/N/HS6/01365) entitled The role of cognitive and emotional factors in adaptation to cancer.

**Methodology or Methods:** Polish cancer patients (N = 155) at the age of 40–75 years, before colorectal tumor resection (T1 – retrospective measurement, T2 – one or two days before surgery) and 6 months (T3) after the surgery. Groups of patients had surgeries: right laparoscopic hemicolectomy (S1), anterior rectal cancer resection (S2), abdominoperineal rectal cancer resection (S3). We have measured: health behaviors.

**Impact on practice or Results:** The association of health behaviors with the length of stay in a hospital and readmission was dependent on the type of treatment and periods T1, T2, T3. Physical activity was related to the length of hospital stay for S3 in T1 ( $r = -.43$ ) and T2 ( $r = -.31$ ).

**Discussion or Conclusions:** For the results of surgical treatment, limitation of the anti-health behaviors is more important than increasing the consumption of pro-healthy food. This effect is visible at more patient-radical operations. These results can provide some guidance for institutions dealing with cancer prevention.

### 34 | Breast cancer related awareness, knowledge, attitude and practice among market women in Ibadan, Southwest Nigeria

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**Background/rationale or Objectives/purpose:** The purpose of this study was to assess market women's awareness, knowledge, attitude and practices regarding breast cancer.

**Methodology or Methods:** This descriptive cross sectional study was conducted in two market places in Ibadan as part of a breast cancer awareness and screening program carried out in the markets. A breast cancer related awareness, knowledge, attitude and practice questionnaire with a Cronbach's alpha value of .654 was used for data gathering. Data was collected as the women waited to be screened for breast cancer.

**Impact on practice or Results:** Participants in this study were 153 market women. Their mean age was 45.56 (range 16–72). Most (65.4%) were Christians and had secondary school education (43.8%). 85% were aware of breast cancer but only 34.0% knew at least one breast cancer screening method. Their mean breast cancer related knowledge was 53.5%. Though attitude was mostly favorable towards breast cancer screening, 43.8% felt scared thinking/talking about breast cancer, only 22.2% felt susceptible to it and 32.0% indicated previous screening. Significant linear relationships were found between education and breast cancer-related knowledge ( $P < 0.05$ ); between breast cancer-related knowledge, attitude and practice ( $p < 0.05$ ) and between breast cancer-related awareness and practice ( $p < 0.05$ ). Breast cancer-related attitude was however not significantly correlated with practice ( $P > 0.05$ ).

**Discussion or Conclusions:** Though the breast cancer related knowledge of the market women was slightly above average, their screening practices was low despite indicating mostly favorable attitude towards breast cancer screening. There is need to better understand the factors mediating breast cancer related attitude and practice so as to enhance breast cancer screening among market women.

## O. PROGRESSIVE, ADVANCED AND TERMINAL DISEASE

### 447 | Psychological Adversity, Self-Management Skills and Stress-Related Neuroendocrine Activity in Metastatic Breast Cancer Patients

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**Background/rationale or Objectives/purpose:** Previous studies indicated that higher levels of perceived stress-management skills (PSMS) are associated with lower perceived emotional distress in non-mBCa patients. Distress can disrupt circadian rhythms, such as HPA axis abnormalities and SNS activity in women with mBCa. Both increased SNS signaling and HPA dysregulation can indirectly influence immune cells to down-regulate cellular immune function and up-regulate pro-inflammatory signaling.

As part of the DistressBrain project aiming to examine the associations between psychosocial variables, brain regional metabolism, and neuroendocrine activity in metastatic breast cancer (mBCa) patients, the present investigation aims to examine whether neuroendocrine activity is associated with negative affect and self-management skills in this population.

**Methodology or Methods:** Participants are mBCa patients treated at our center in their initial mBCa phase with no CNS impairment and 0–1 ECOG. Psychosocial variables were assessed using the DT, HADS, BSI, and MOCS. Salivary cortisol (HPA activity) was measured 3x/day in 3 consecutive days and alpha-amylase (SNS activity) 1x/day (afternoon) in 2 consecutive days.

**Impact on practice or Results:** Preliminary analysis of 50 patients shows that high levels of PSMS are negatively correlated with negative affect at significant statistical levels. Data related with neuroendocrine activity is being analysed and will be presented.



**Discussion or Conclusions:** These preliminary findings suggest the relevance of implementing stress-management interventions with mBCa patients to reduce their emotional distress and improve their coping. Funded by FCT:PTDC/MHC-PSC/3897/2014(2016–2019)

### 686 | Predictors of Stress, Tobacco Use, and Alcohol Use in Patients Diagnosed With Advanced Cancer and their Caregivers

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**Background/rationale or Objectives/purpose:** The aims of the study were to examine the role of the cancer patients' or caregivers' perceived stress and substance use on their own and their partner's tobacco use and alcohol use.

**Methodology or Methods:** Patients diagnosed with advanced cancer and their caregivers were administered a battery of questionnaires that included the Perceived Stress Scale and Substance Use Questionnaire at baseline and six-month follow up.

**Impact on practice or Results:** A total of 52 patients-caregiver dyads were included in the study. The mean age of patients and caregivers was 66 (SD = 8.89) and 64 (SD = 13.4), respectively. The majority of patients were male (63.5%) and caregivers female (75%). Most of the dyads were intimate partners (82.7%). Predictors of tobacco use for caregivers included low income ( $\chi^2 = 8.658$ ,  $p = .037$ ). There were no sociodemographic predictors of tobacco use in patients or alcohol use in patients or caregivers. Using Actor Partner Interdependence Modeling, the number of cigarettes used by caregivers predicted the number of cigarettes used by patients ( $b = .109$ ,  $p = .012$ ). Higher levels of perceived stress in patients predicted a lower number of cigarettes used by the caregiver ( $b = -.001$ ,  $p = .044$ ). The number of cigarettes smoked at baseline predicted the number of cigarettes smoked at 6-months for both patients ( $b = .710$ ,  $p < .001$ ) and caregivers ( $b = 0.887$ ,  $p < .001$ ). A similar pattern was observed from baseline to 6-months for alcohol use in patients ( $b = .898$ ,  $p < .001$ ) and caregivers ( $b = 1.251$ ,  $p < .001$ ).

**Discussion or Conclusions:** Socioeconomically disadvantaged patients with cancer and their caregivers may benefit from stress reduction and smoking and alcohol cessation interventions that include both patient and caregiver.

### 631 | "I think this is how much you should know": Beliefs about and experiences of prognosis disclosure versus nondisclosure among Indian advanced cancer patients and their family carers

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**Background/rationale or Objectives/purpose:** Prognosis nondisclosure to cancer patients is commonly practiced in many Asian countries. Family caregivers' cite fear of patients losing hope as the main reason for nondisclosure. Yet, patients want to know their prognosis and report favorable psychological outcomes when aware of their prognosis. However, no study has explored the beliefs about and experiences of prognosis disclosure among Indian patients with advanced cancer and their primary family carers.

**Methodology or Methods:** Patient-carer dyads formed four groups: aware patient-carers (25), unaware patients-carers (25), patients aware

of their prognosis despite carer not disclosing it (5) and patient-carer both aware of prognosis but preferred not to discuss it (5). Individual semi-structured interviews explored beliefs about and reasons for (non) disclosure, experiences of having cancer/caring for the patient, and how cancer was discussed among patient-carers. Interviews were analyzed using Interpretative Phenomenological Analysis.

**Impact on practice or Results:** There were several similarities and dissimilarities across the groups. Similarities included patient-carers' reasons for prognosis (non)disclosure, levels of concern/worry for each other, communication constraints/difficulties between patient-carer-physician, and lack of supportive care resources. Dissimilarities included differing information seeking behaviors, disparate beliefs about treatment effectiveness, confusion about role allocation/expectations from each another and the physician, and developing contrary and independent coping skills to deal with their cancer.

**Discussion or Conclusions:** Indian patients with advanced cancer and their family carers have some shared and differing perceptions of the illness based on patients' disclosure status. A major clinical implication is to develop empathic communication interventions which address the dyads' concerns, expectations, and communication difficulties.

### 628 | Experiences and attitudes towards disclosure versus nondisclosure of a poor prognosis to advanced cancer patients: Indian oncologists perspectives

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**Background/rationale or Objectives/purpose:** Non-disclosure of advanced cancer prognosis is commonly practiced in some Asian cultures. Oncologists cite reasons such as cultural factors, not wanting to upset patients, family reasons, and desire to protect oneself from harm, for nondisclosure. To explore experiences of and attitudes of Indian oncologists towards disclosure versus nondisclosure of a poor prognosis to advanced cancer patients

**Methodology or Methods:** Thirty oncologists practicing in India were recruited for a semi-structured interview exploring their experiences and attitudes towards disclosure versus nondisclosure of a poor prognosis to advanced cancer patients. Interviews were analyzed using Interpretative Phenomenological Analysis.

**Impact on practice or Results:** Two main themes emerged: (i) barriers to open prognostic communication between physician-patient: lack of resources and communication skills training, needing multidisciplinary teams, patients' internalization of paternalistic model, disclosing to family first, nondisclosure to weak patients, using euphemisms, struggling to establish a "health care proxy"; (ii) facilitators of open prognostic communication between physician-patient: taking communication cues from family, physicians' preference for family meetings and expressing empathy through communication towards caregivers, establishing rapport/knowing the patient, engaging in gradual/individualized disclosure, physicians attempt to balance hope with honesty, helping patients develop a new frame of reference

**Discussion or Conclusions:** Disclosing prognosis was a delicate balancing act for Indian oncologists, i.e., managing patient-family emotions while providing them relevant information and maintaining hope. Additional work is needed to explore Indian patients'-families' needs and perceptions of cancer care. Clinical implications include understanding patient-family beliefs, expectations of care, introducing skills in sharing serious news and providing oncologists with appropriate resources to aid better patient care in India.

## 592 | Fear of progression in advanced cancer patients with prolonged survival on ongoing cancer treatment in an era of personalized medicine – mixed method design

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**Background/rationale or Objectives/purpose:** Hardly any research on fear of progression (FoP) is done in the growing group of advanced cancer patients who are on ongoing cancer treatment, like targeted therapies or immunotherapy. FoP is assumed to be different between advanced cancer patients and cancer survivors. Iatrogenic factors that are associated with novel therapies are assumed to contribute to FoP. The aim of this study is to investigate the concept of FoP among advanced incurable cancer patients on ongoing treatment.

**Methodology or Methods:** Part 1: in-depth interviews and focus groups with patients, medical staff and psychologists together with analysis of dynamic content of the internet, including blog posts to investigate manifestations and characteristics of normal and severe FoP. Part 2: longitudinal observational study with patients filling in monthly assessments on FoP during one year. These data will be linked to therapy side effects, and medical appointments. Part 3: interpersonal factors of FoP will be approached from an ecological perspective. Data will be collected through (full time) observation of patients in the week before, directly following, and in the week after medical consultations. The researcher will attend clinic consultations, will have informal conversations with patients and relatives in the hospital waiting room, and will accompany them to imaging appointments and other hospital services.

**Impact on practice or Results:** Patient stories and extensive elaboration and discussion of the research designs will be discussed at the conference.

**Discussion or Conclusions:** With this study we expect to be able to provide insight into the prevalence, course and medical and intra/inter personal factors relating to FoP.

## 508 | To enhance patient-physician communication faced to drug resistance, the perspective of patient empowerment. A study protocol to develop and evaluate a question prompt list in oncology

*Léonore Robieux, Anne Brédart, Mathilde Trosdorf, Etienne Seigneur, Leïla El Mellah, Sylvie Dolbeault*  
*Institut Curie, Paris, France*

**Background/rationale or Objectives/purpose:** Drug resistance (DR) is a main current challenge in oncology research, especially since most patients who die of cancer have a disseminated disease resistant to multiple treatment regimens. Talking about prognosis, whilst helping patients manage uncertainty and maintain hope do not make easy to discuss about DR. In fact, less than 50% of medical information are understood by patients, patients do not participate, and physicians do not sufficiently endorse patients' question-asking.

Question Prompt Lists (QPL) aimed to increase patient empowerment to facilitate communication. The aims of this study are to develop and pilot-test a QPL for cancer patients facing DR.

**Methodology or Methods:** The study design is multi-centred, cross-sectional based on a mixed methodology. A collaborative approach has been chosen.

**Impact on practice or Results:** The study unfolds two main phases.

Phase 1: first draft of the QPL. First, literature review of existing QPL and individual interviews with professionals will provide an understanding of the clinical context and communication issues. Second, the QPL structure will be revised from oral and written surveys with patients. Third, focus groups will confirm the QPL structure and pre-

pare its clinical application. Finally, the Delphi process establishes the contents of the tool.

Phase 2: a randomized controlled trial to test the clinical utility and efficacy of the QPL.

**Discussion or Conclusions:** The QPL is expected to foster better patient-centred communication processes, and therefore more healing patient-physician relationships when discussing DR. It should thereby enable better patient self-management, while managing expectations, and uncertainty. The trial protocol has been designed to be replicable in other cancer centers.

## 507 | Oncologists' perception of communication about drug resistance: A qualitative study

*Léonore Robieux, Anne Brédart, Mathilde Trosdorf, Etienne Seigneur, Leïla El Mellah, Sylvie Dolbeault*  
*Institut Curie, Paris, France*

**Background/rationale or Objectives/purpose:** Most patients who die of cancer have a disseminated disease that has become resistant to successive therapeutic modalities. Drug resistance (DR) therefore represents a key moment in the patient's care continuum. The patient-oncologist communication brings up information on disease severity and prognostic uncertainty, which constitutes a challenge requiring in depth understanding. The aim of this study was to explore oncologists' perception of the content and challenges of communicating about DR.

**Methodology or Methods:** We carried out a multi-centred cross-sectional study. Open-ended questions explored oncologists' meaning attributed to DR, their perceptions of communication with cancer patients about DR and possible barriers to that communication. The content of the interviews was analyzed according to the Content Analysis Technique.

**Impact on practice or Results:** 27 physicians (Mean age = 53 years, SD = 5.10, 52% female) volunteered to participate in the study.

Interviews revealed a clinical context characterized by a decisive change in care. DR appeared as a cancer disease progresses and acquires increased severity. Physicians described an ambivalent communication strategy oscillating between fighting and palliating, evidencing their hard task in discussing uncertainty while sustaining hope. Interviews identified physicians' difficulties, due to the necessary regulation of patient distress and their own emotions, but also due to the severity and violence of clinical situation.

**Discussion or Conclusions:** Physicians highlighted their challenges in communicating and offering medical care alternatives face to DR. To enhance patient-centred care, specific interventions should be implemented to empower patient in expressing their needs for information and support, and to help physicians to tailor their response to patients' expectations.

## 503 | The link between depression and health care utilization and costs in patients diagnosed with advanced cancer

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<sup>1</sup>University of Pittsburgh, Pittsburgh, USA; <sup>2</sup>University of Miami, Miami, USA

**Background/rationale or Objectives/purpose:** The aims of this study were to examine the associations between depression and complications, health care utilization and costs in patients with advanced cancer.

**Methodology or Methods:** Patients diagnosed with cancer were administered a battery of questionnaires, including the Center for Epidemiological Studies-Depression (CES-D) Scale. Health care utilization and costs for patients was collected for one year after the administration of the CES-D.

**Impact on practice or Results:** Of the 100 patients, the mean age was 64 years (SD = 10.3), the majority of patients were male (51%), Caucasian (89%), and had stage III and IV cancer (60%), and 34% of patients had clinical levels of depressive symptoms (CES-D > 16). Surgical patients with clinical levels of depressive symptoms had a greater number of complications [ $c^2 = 4.4$ ,  $p = 0.036$ ] and severity of complications [ $c^2 = 4.5$ ,  $p = 0.033$ ]. Patients undergoing chemotherapy, who reported depressive symptoms in the clinical range, were more likely to require medical intervention for chemotherapy side effects [ $c^2 = 4.2$ ,  $p = 0.04$ ]. Patients reporting clinical levels of depression had a greater number of emergency room visits [ $F(1,99) = 8.4$ ,  $p = 0.005$ ]. Patients who reported clinical levels of depressive symptoms had significantly higher median costs associated with the loss of work force productivity (Median = \$7154 versus \$2104;  $p = 0.015$ ), hospital costs (Median = \$29,917 versus \$8292,  $p = 0.019$ ), and cost per registration (Median = \$3324 versus \$1247,  $p = 0.017$ ) but lower physician costs (Median = \$6171 versus \$10,821;  $p = 0.026$ ) than patients with non-clinical levels of depressive symptoms.

**Discussion or Conclusions:** There is an urgent need for effective and scalable interventions to reduce depressive symptoms in patients diagnosed with cancer to improve quality of life and reduce health care utilization and costs.

### 300 | The Patient and Caregiver Experience with Medical Assistance in Dying (MAiD): preliminary qualitative results

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**Background/rationale or Objectives/purpose:** To explore the patient and caregiver experiences of Medical Assistance in Dying (MAiD) and their support needs.

**Methodology or Methods:** Patient requesting MAiD at the University Health Network and Sunnybrook Health Sciences Centre in Toronto, Canada and their caregivers were recruited to participate in semi-structured qualitative interviews about their experience with the MAiD process, their motivations for requesting MAiD, and their perspective on the quality of healthcare they have received. Interview transcripts were thematically coded and analyzed using grounded theory.

**Impact on practice or Results:** Preliminary qualitative results indicate that requests for MAiD were primarily motivated by the inability to enjoy life, loss of autonomy, and anticipation of physical suffering near the end of life. Patients expressed relief following approval for MAiD, but identified several challenges with preparation for death. Caregivers were supportive of the MAiD decision but reported experiencing increased stress following the patient's approval for MAiD, related to both logistical and emotional concerns. Supportive care was not routinely offered to either patients or caregivers. In some dyads, the MAiD request and process also activated long-standing interpersonal strain. Both patients and caregivers endorsed further clarification of the MAiD eligibility criteria and most were supportive of including MAiD as part of advance care directives.

**Discussion or Conclusions:** Themes arising from this preliminary analysis indicate that the MAiD process places a significant burden on caregivers. These findings may inform the development of supportive interventions to help patients seeking assisted death and their families prepare for the end of life.

### 288 | Examining Symptom Profiles Associated with Medical Assistance in Dying: A Protocol and Initial Findings

*K. Brooke Russell<sup>1</sup>, Lorraine Shack<sup>2,1</sup>, Fiona Schulte<sup>1,2</sup>, Brian Kelly<sup>3,1</sup>, Linda Watson<sup>2,1</sup>, James Silvius<sup>2,1</sup>, Barry D. Bultz<sup>1,3</sup>*

<sup>1</sup>University of Calgary, Calgary, Canada; <sup>2</sup>Alberta Health Services, Calgary, Canada; <sup>3</sup>University of Newcastle, Callaghan, Australia

**Background/rationale or Objectives/purpose:** In 2016 the Canadian government enacted legislation for the provision of medical assistance in dying (MAiD). From 2017–2018 Alberta's provincial health authority, Alberta Health Services (AHS) received 836 requests for MAiD, resulting in 512 medically-assisted deaths. Of these, approximately 59% of cases were cancer-related. However, symptom profiles of those who request MAiD are not well understood. Unique to Alberta, AHS has mandated province-wide psychosocial screening (Putting Patients First; formerly Screening for Distress) for all patients receiving cancer care since 2014, including information on current concerns, symptoms, and the wellbeing of patients at every visit. By linking psychosocial data with provincial MAiD data, we aim to compare psychosocial symptoms overall and over a six-month period preceding death among those who request and complete, request and do not complete, and those who do not request MAiD.

**Methodology or Methods:** Provincial data from Putting Patients First (including patient-reported symptoms via the Edmonton Symptom Assessment System, and patient-reported concerns via the Canadian Problem Checklist) will be linked to provincial MAiD data. We will analyze trajectories of symptoms from six-months before death through to end-of-life, comparing those who request and complete, request and do not complete, and those who do not request MAiD.

**Impact on practice or Results:** Preliminary results are expected by the time of presentation.

**Discussion or Conclusions:** This work will help to better understand the patient experience, and to identify potential differences between MAiD trajectories. This work will support future initiatives aimed to provide better patient care through symptom management and support resources.

### 252 | A Medical Assistance in Dying Program in Canada: Implications for Psychosocial Oncology

*Gilla K. Shapiro, Madeline Li, Gary Rodin*  
Princess Margaret Cancer Center, Toronto, Canada

**Background/rationale or Objectives/purpose:** In 2016, Canada established the legal criteria permitting Medical Assistance in Dying (MAiD) for adults with a grievous and irremediable medical condition. Almost 7,000 Canadians have received MAiD, the majority of whom had advanced cancer. There has been relatively little attention to MAiD in oncology. We report here on MAiD process and outcomes in a large tertiary care medical center in Toronto, Canada.

**Methodology or Methods:** Data regarding patients who inquired about MAiD at the University Health Network in Toronto from March 2016 to February 2019 was extracted. Measures included socio-demographic and medical characteristics, rates of inquiries and receipt of MAiD, and referral for specialized psychosocial and palliative care services.

**Impact on practice or Results:** Of 204 MAiD inquiries, 35% of patients ( $n = 72$ ) received the MAiD intervention. Of those who received MAiD, the mean age was 70.9 (SD = 13.4) and 54% were male. Cancer was the most common primary diagnosis of those who received MAiD (77.8%), of which 33.9% were gastrointestinal (GI). 58% of GI MAiD interventions were pancreatic. While 88.9% of those who received MAiD had accessed specialized palliative care services, only 56.9% had accessed specialized psychosocial services.

**Discussion or Conclusions:** Cancer is the most common diagnosis of those who received MAiD. One third of cancer patients who received MAiD had gastrointestinal cancer, the majority of which were pancreatic. These rates are disproportionate to their distribution in this hospital's patient population. Although MAiD inquiries commonly arise from psychological concerns, many patients who request MAiD are not referred for or do not accept specialized psychosocial care.



## 251 | A Multiple Streams analysis of Medical Assistance in Dying in Canada: Why here? Why now?

Gilla K. Shapiro, Madeline Li, Gary Rodin

Princess Margaret Cancer Centre, Toronto, Canada

**Background/rationale or Objectives/purpose:** In 2016, Canada became one of only a few countries with legal Medical Assistance in Dying (MAiD), which allowed patients with terminal cancer to choose to die using MAiD. Policies related to this new medical practice impacts patients, family members, medical professionals, and the health system. This study is the first to apply a theoretical policy framework—Kingdon's Multiple Streams framework—to understand the factors that led to this fundamental end-of-life policy change in Canada.

**Methodology or Methods:** Kingdon's Multiple Streams framework provides an apt model that conceptualizes and analyzes the necessary conditions that allow for decision-making and policy change. This approach describes policy development in a model of three concurrent, but independent, streams: 1) the 'problem' stream; 2) the 'policy' stream; and, 3) the 'politics' stream. This framework emphasizes the importance of timing—a 'policy window'—that is created when these three streams are simultaneously 'open' to policy change.

**Impact on practice or Results:** The problem stream highlights different conceptualizations and frames of the 'problem' that MAiD addresses. The policy stream addresses the suitability of the current MAiD policy in addressing this problem. The politics stream identifies the perspectives and involvement of multiple stakeholders (e.g. scientific experts, bureaucrats, and community activists) that have informed policy in this decision arena.

**Discussion or Conclusions:** This work provides an expanded and inter-disciplinary analysis of the legalization of MAiD in Canada to inform research, policy development, and practice. We discuss the implications of applying Kingdon's policy framework for theory and practice.

## 172 | The ENABLE study: Understanding and characterising the value and role of self-management support for people living with cancer that is treatable but not curable

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**Background/rationale or Objectives/purpose:** Attention is turning to the needs of people living with treatable but incurable cancer, a group with complex needs, living with uncertainty over time. More research is needed to understand how this group self-manage the impact of cancer to strengthen the evidence-base for interventions to support self-management. This study aims to understand the value and outcomes of self-management support for people living with treatable but incurable cancer.

**Methodology or Methods:** Qualitative longitudinal methods, an innovative approach for the study of this group, will examine how support needs change over time in relation to self-management and unpredictable disease trajectories. Thirty patients and 30 carers will be recruited from two hospitals, each participating in three interviews over one year. Patients will be purposively sampled according to age, gender, cancer type and anticipated survival. Carers will be recruited via nomination by patients but interviewed separately. One-off interviews will be conducted with 20 health care professionals, providing data from multiple perspectives. Based on interview findings, a national UK wide modified-Delphi process will map areas of consensus and disparity regarding conceptualisations and outcomes of self-management support.

Interviews will commence in April 2019.

**Impact on practice or Results:** We will present our initial findings from the longitudinal interviews with patients and carers, focusing on self-management strategies and roles undertaken to support self-management in the context of living with the uncertainty of incurable cancer.

**Discussion or Conclusions:** The key output will be practice recommendations in relation to self-management support, producing evidence to inform service innovation for those living with treatable but incurable cancer.

## 124 | When is treatment refusal a suicidal attempt? A Clinical Reflection

Toni Lindsay

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**Background/rationale or Objectives/purpose:** Young People with a cancer diagnosis are suggested to have an increased risk of suicidal ideation and suicide attempts than same age peers. This case review follows the case of Katie, a 25-year-old woman with metastatic osteosarcoma who declines treatment.

**Methodology or Methods:** Katie was referred to the Psychology service as part of routine care. She completed her initial chemotherapy and surgery with very high levels of distress but was found to be disease free at the completion of the intense regime. Six months later she was discovered to have recurrent disease on scans (lung only) and declined further chemotherapy. Prior to diagnosis, Katie had a significant history of self-harming, depression and concomitant substance use, but had no prior suicide attempts.

**Impact on practice or Results:** Katie's case presented several challenges for the treating team. Firstly, what is the distinction between reasoning around treatment decline and suicidality? Secondly, how does one establish competence in the context of fluctuating mood and substance use? Finally, how do we support young people and their families in making such complex decisions at their stage of life?

**Discussion or Conclusions:** Although these cases are rare, with most patients actively seeking any available treatment options, the impact on a team when they occur is significant. Through the process of supporting Katie during her decision making, it allowed the clinical team to question and challenge their own values and beliefs around appropriate management for such patients who choose to take a different path, whilst engaging strategies around risk mitigation and duty of care.

## 100 | Public Perceptions of Cancer as Seen in Obituaries

Carolyn Gotay, Marliese Dawson, Nicole Bartley, Hui Shen

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**Background/rationale or Objectives/purpose:** Written documents and records reflect societal views and values. This study investigated how cancer deaths were conveyed in obituaries.

**Methodology or Methods:** Analysis was based on personal (not commercial) obituaries in a daily Canadian newspaper for one month during 1959, 1984, 2009, 2010, 2011, and 2012 (N = 3672). We developed codes through thematic analysis to assess the relationship between cause and description of death.

**Impact on practice or Results:** Recent obituaries were more likely to include a photo and to be described as peaceful, but few other differences were seen over time. The cause of death was mostly unspecified (85%). Cancer was the most frequent named cause (N = 278, 8%), followed by "illness" (N = 134), and heart disease (N = 28). Deaths were most often described as peaceful (30% of all notices) and "struggle" was mentioned in 9% of obituaries. In contrast, 86% of cancer deaths were described with struggle imagery, such as "surrendered to cancer after a lengthy and difficult struggle." Almost half of cancer deaths (46%) were characterized as heroic (e.g., "passed away following a courageous battle with cancer").

**Discussion or Conclusions:** Obituaries cited cancer as the cause of death more than any other disease despite nearly equal population death rates for cancer and heart disease. Survivors described cancer deaths as characterized by struggle, battle, and heroism. This study demonstrates the need for revision of the public perception that coping with cancer is a battle that requires patient valor.

## 24 | Is there is a discordance between actual prognosis and accurate prognostic awareness in patients with advanced cancer: A literature review

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**Background/rationale or Objectives/purpose:** To determine if there is a discordance between actual prognosis and accurate prognostic awareness in patients with advanced cancer.

**Methodology or Methods:** A systematic approach to an extended literature review was adopted. The literature search was conducted in four databases in March 2018; Cinahl, Medline, PsycINFO and Cochrane Library. The literature search was undertaken independently by both authors. Inclusion criteria were studies published between 2008 and 2018 and papers written in the English language. Data extraction forms and relevant critical appraisal tools were used to assess the methodological rigour of studies.

**Impact on practice or Results:** There were a total of 2647 papers screened. A total of 17 papers were included in the literature review. The findings are presented in three themes: theme one focused on patients who do have an accurate prognostic awareness related to their advanced cancer; theme two focused on patients with advanced cancer who were given accurate prognostic information but did not have accurate prognostic awareness, and theme three related to patients who were not being accurately informed of their prognosis.

**Discussion or Conclusions:** The findings of this literature review demonstrates the majority of patients have an inaccurate prognostic awareness. As patients who are informed of their prognosis, make better decisions about their plan of care, than a patient who has not been informed (El-Jawahri et al., 2013), this reinforces the importance of clinicians assessing the patients understanding of their prognosis.

### Questions

What is the rationale for patients having an inaccurate prognostic awareness?

What are the challenges in providing an accurate prognosis to patients with advanced cancer?

## P. PSYCHOSOCIAL CARE AND SERVICE DEVELOPMENT

### 737 | HOW ARE CHILDREN IMPACTED BY A PARENT'S DIAGNOSIS OF CANCER?: QUALITATIVE INTERVIEWS WITH ONCOLOGY HEALTH PROFESSIONALS, PARENTS, AND CHILDREN

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**Background/rationale or Objectives/purpose:** Living with parental cancer can have a profound and ongoing impact on a developing child, rendering them vulnerable to a host of internalising and externalising problems. However, literature and clinical practise remain uncertain regarding how children are affected and how to support them. Past studies have relied on adult reports, thus missing crucial information only children can provide. From a multi-informant perspective that includes children, this study aimed to unpack how children are impacted by their parent's cancer diagnosis.

**Methodology or Methods:** Semi-structured interviews were conducted with key informants, including health professionals (n = 12), parents (n = 10), and children (5 – 17 yrs, n = 11). Informed by guidelines outlined by Braun and Clarke (2006) and Pope and Mays (2006), thematic analysis was performed to identify preliminary themes. NVivo 12 Pro software was used to facilitate data organisation and analysis.

**Impact on practice or Results:** Preliminary findings indicate several consistent themes across informants. For HPs, themes included accessibility, knowledge and expertise of children, pre-existing challenges, and recommendations. For parents, themes included coping, support networks, protecting, knowledge, and awareness. For children, themes included coping strategies, comprehending, support networks, communication, family dynamics, and lifestyle changes.

**Discussion or Conclusions:** These preliminary findings demonstrate the impact that a cancer diagnosis can have on children. Our findings also highlight the difficulties and challenges regarding providing support to these children. There appears to be scope for the development of a model which conceptualises the complex nature of how children are impacted by their parent's cancer, to further inform research and future intervention development.

### 733 | The BOLD Buddy Peer Navigation Program for Underserved, Urban Breast Cancer Patients: Evaluation Outcomes and Implications for Coping and Adherence

Alyson Moadel-Robblee<sup>1,2</sup>, Amber Gipson<sup>1</sup>, Della Makower<sup>3</sup>, Jana Fox<sup>3</sup>, Benjamin Bravo<sup>1</sup>, Fernando Camacho<sup>3</sup>

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**Background/rationale or Objectives/purpose:** As the U.S. health care system strains under the weight of increasing demands and fewer resources, the role of peer-to-peer support takes on greater importance to ensure patient-centered and culturally competent care. Evaluation of the volunteer-based BOLD Buddy Peer Navigation Program developed for underserved breast cancer patient population in Bronx, NY is presented.

**Methodology or Methods:** Between November 2014– April 2018, 75 breast cancer patients on treatment participated in a psychosocial needs assessment and referral program aimed at reducing disparities in distress outcomes and treatment adherence. Patients were self- or provider-referred and introduced to peer navigation, of which 37 (49%) endorsed interest in being matched with a “BOLD Buddy”. The sample was 51% Hispanic and 29% African American, English- 73% and Spanish-speaking 27%.

**Impact on practice or Results:** At 3 months, 22 (29%) patients were reached to complete a follow-up assessment. Among those with Buddies (n = 9), barriers to adherence were notably lower than those without (n = 12) in: Communication with MD (0% vs 17%), Health Insurance (11% vs 25%), Literacy (0% vs 25%), and Language (0% vs 17%). Most (67%) Buddy contacts took place by phone vs clinic visits, with a range of 1–50 contacts/median = 5. Satisfaction ratings of 10 (0–10 scale) were given by 67%. Patients reported Buddies helped them cope better (86%), trust their medical care (71%), communicate with providers (29%), and continue treatment (29%).

**Discussion or Conclusions:** With half of patients endorsing an interest in peer support, this demonstration project points to the substantive need and benefit for patients to connect with similar others who can provide guidance and trust.

### 716 | Cancer Stigma and Job loss among Cancer Survivors

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**Background/rationale or Objectives/purpose:** Cancer stigma and experience of social discrimination can hinder ability to return and retain to work for cancer survivors. This study aims to evaluate the association between cancer stigma and job loss among cancer patients.

**Methodology or Methods:** We conducted a cross-sectional survey with adult cancer survivors who worked at the time of diagnosis from the two university-based cancer centers in Korea from October 2017 to March 2018. Patients were eligible for this study if they were aged between 20 to 65 and if they had survived more than 6 months without recurrence. Impossibility of recovery, stereotype of cancer patients, and experience of discrimination at workplace were assessed for cancer stigma. Multivariable logistic regression was used to evaluate the association between cancer stigma and job loss.

**Impact on practice or Results:** Over 40% of the cancer survivors believed impossibility of cancer and had stereotypical views of cancer patients, and about 20% of the study participants reported discrimination at workplace. Patients perceived the impossibility of recovery of cancer were 2.6 times (95% CI 1.37, 4.88) more likely to experience job loss than those without the perception. Patients who had discrimination experiences at workplace were 2.2 times (95% CI 1.15, 4.25) more likely to experience job loss than patients without it adjust all other confounders.

**Discussion or Conclusions:** Cancer stigma seems to be one of major psychosocial barriers for cancer patients to continue to work. Considering its negative impact on job loss, more education would be necessary to hinder cancer stigma among cancer patients.

## 711 | Cancer Patients' Preference regarding the timing of end-of-life discussions with oncologists

*Sayaka Jinno<sup>1</sup>, Maiko Fujimori<sup>1</sup>, Ayako Sato<sup>1</sup>, Mihoto Umehashi<sup>1</sup>, Naomi Inomata<sup>1</sup>, Kotone Hata<sup>1</sup>, Asako Mitsui<sup>1</sup>, Takuji Okusaka<sup>2</sup>, Yosuke Uchitomi<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** It is general that communication regarding prognosis and treatment options between patients with advanced cancer and oncologists is insufficient (DesHarnais et al., 2007; Parker et al., 2007). It has been pointed out that patients have unrealistic expectations for curative potential and important discussions regarding end-of-life are taking place just before patient death (Weeks et al., 1998; Mack et al., 2012). The purpose of this study is to investigate cancer patients' preference regarding the timing of end-of-life discussions with oncologists.

**Methodology or Methods:** Focus group interviews were conducted for a total of 18 people including 5 pancreatic cancer patients, 4 caregivers, 3 bereaved families and 6 oncologists. All dialogue during the interview was audiotaped and transcribed. Two trained psychologists independently divided into basic blocks. Two nurses and a palliative care physician who study in this area conducted content analysis.

**Impact on practice or Results:** It was mainly preferred to have an end-of-life discussion at the timing when the patient wanted to discuss. Secondly, it was preferred to discuss as early as possible. Oncologists indicated that it is difficult to understand the timing when patients wanted to discuss.

**Discussion or Conclusions:** It was suggested that patients, families, bereaved and oncologists preferred to have an end-of-life discussion at the timing when the patients wanted to discuss. However, it's difficult

for oncologists to be aware of the timing. Therefore, support to facilitate the discussion for patients, families and oncologists might be useful using tools that can trigger discussion.

## 709 | CHARACTERIZATION OF ONCOLOGICAL PATIENTS SERVED BY THE PSYCHO-ONCOLOGY SERVICE AT THE NATIONAL INSTITUTE OF CANCER OF CHILE DURING 2016

*Claudia Vega*

*Psycho-oncology Service of the National Cancer Institute, Santiago, Chile*

**Background/rationale or Objectives/purpose:** To present advances of a descriptive non-experimental cross-sectional study that seeks to know the characteristics of oncological patients treated by the Psycho-oncology service of the National Cancer Institute of Chile during 2016.

**Methodology or Methods:** Frequency distribution and measures of central tendency will be described considering quantitative and qualitative variables of the population treated during 2016. The information will be collected from secondary sources of clinical data (Statistical Medical Guidance Service, information records on the Medisyn 3.0 platform, and internal service statistical records).

**Impact on practice or Results:** Preliminary outcomes show that of the 789 patients attended during 2016, 66.2% were women with an average age of 55 years and 33.7% men with an average age of 60 years. Regarding the psycho-oncological diagnosis, adjustment disorder appears more frequently for both women and men. The greater number of patients accessed individual psychological care with 82.85%.

The oncological diagnoses that have the highest frequency of attentions in order of appearance correspond to; in women, breast, digestive, gynecological, and head and neck; whereas for men the higher frequency is found in digestive, urological, head and neck and sarcoma.

**Discussion or Conclusions:** The main outcomes of the study will improve patient information records, development of future characterizations and the implementation of effective interventions for the population.

## 691 | The Development of a Scale to Assess Risk for Metabolic Syndrome in Cancer Caregivers: Preliminary Findings

*Reyna Jones<sup>1</sup>, Debra Moore<sup>2</sup>, Thomas Kamarck<sup>3</sup>, David Geller<sup>4</sup>, Jessica Miceli<sup>4</sup>, Carol Lynn Hecht<sup>4</sup>, Michael Spring<sup>4</sup>, Ritambhara Pathak<sup>4</sup>, Qi Chen<sup>4</sup>, Jennifer Steel<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** Cancer caregivers are at increased risk for cardiovascular disease (CVD). The aims of the present study were to develop an instrument to identify cancer caregivers at risk for the development of metabolic syndrome, an intermediate endpoint for CVD.

**Methodology or Methods:** Cancer caregivers were enrolled in a study examining predictors of metabolic syndrome. Predictors included perceived stress, caregiver stress, depression, hostility, physical activity, alcohol and tobacco use, loneliness, social support and relationship with the patient. Logistic regression and factor analyses were performed in the development of the instrument. Internal consistency and Area Under the Receiver Operator Curve were also performed to test the psychometric properties of the new instrument.

**Impact on practice or Results:** A total of 111 caregivers were included in the analyses. The mean age of caregivers was 59.6 (SD = 12.7) and the majority of caregivers were female (74.8%), Caucasian (94.6%), and were the spouse of the cancer patient (65.8%). Using regression analyses, the loneliness and hostility questionnaires were most likely to



predict metabolic syndrome. Item reduction was performed using factor analysis. Preliminary findings suggested that a 9-item instrument was predictive of metabolic syndrome [ $B = 0.20$ ,  $HR = 1.22$ ,  $p = 0.002$ ]. The reliability of the instrument was good with a Cronbach Alpha = 0.80. The Area Under the Receiver Operator Curve was also fair (AUROC = 0.669; 95% CI = 0.567–0.770,  $p = 0.003$ ). Based on the AUROC, the best cut point to detect metabolic syndrome was a score of 7 (Sensitivity = 0.787 and Specificity = 0.590).

**Discussion or Conclusions:** Preliminary findings suggested that this 9-item questionnaire may be useful in identifying cancer caregivers at risk for metabolic syndrome.

### 675 | Developing and implementing a practice version of the Oncology Social Work Intervention Index (OSWii)

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**Background/rationale or Objectives/purpose:** Oncology social work has been hampered by the lack of a validated instrument to quantify psychosocial services. A research instrument (OSWii) that measures the interventions provided by oncology social workers was developed (Oktay et al, 2018, 2019). In response to expressed interest of oncology social workers, a “Practice Version Prototype” (PVP) was developed. This abstract describes the initial experience of oncology social workers who are using the PVP in their practices.

**Methodology or Methods:** The OSWii incorporates over 30 clinical interventions, including those that educate, connect and advocate for needed services, and those that provide support or counseling to facilitate coping or adjustment with diagnosis and/or treatment. Practitioners are able to modify the index to fit their practice needs. We provide descriptive statistics (frequencies and percents) from four settings representing very different parts of the U.S. and compare them across the different settings. We also compare the frequencies to those attained in the pilot test of the research version which involved 156 cases from 28 social workers (Oktay et al, 2019).

**Impact on practice or Results:** We describe both the problems encountered as the practitioners attempted to implement the PVP, and the solutions they developed, including modifications made in the instrument. The addition of the PVP has affected practice by providing administrators information on the interventions being provided, validating the profession and increasing social workers’ ability to examine their practices.

**Discussion or Conclusions:** Changes are needed to increase utilization. The widespread incorporation of the PVP has the potential to enhance clinical practice by providing information and accountability in the field.

### 663 | LONGITUDINAL HEALTH RELATED QUALITY OF LIFE OF PAEDIATRIC SIBLING STEM CELL DONORS

*Morgan Young-Speirs<sup>1</sup>, Wendy Pelletier<sup>2,3</sup>, Melanie Khu<sup>3</sup>, Greg Guilcher<sup>2,3</sup>, Fiona Schulte<sup>2,3</sup>*

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**Background/rationale or Objectives/purpose:** Paediatric sibling donation can be a lifesaving, altruistic act that strengthens family bonds. However, it can also have negative psychosocial impacts on sibling donors, whose needs are often overlooked. This study aims to evaluate

the health related quality of life (HRQL) of paediatric sibling donors for two years following their donation, to inform the development of a standardized sibling screening protocol.

**Methodology or Methods:** Participants included 32 donors (46.9% male), age 5–18 years (mean =  $10.58 \pm 4.01$ ), who donated peripheral blood stem cells or bone marrow to their sibling. They completed the Paediatric Quality of Life Inventory (PedsQL) at the following time points: initial assessment (pre-donation), donation, and three follow-ups post-donation (1, 6, and 12–24 months). PedsQL scores range from 0 to 100, with 100 indicating better functioning. Linear mixed model analysis was used to assess changes in sibling-reported HRQL over time.

**Impact on practice or Results:** Mean scores for HRQL at initial assessment were  $73.56 \pm 11.11$  for Total and  $80.94 \pm 12.51$  for Physical,  $60.78 \pm 18.32$  for Emotional,  $80.78 \pm 15.56$  for Social and  $68.75 \pm 14.92$  for School Functioning. Linear mixed model analysis revealed a significant difference for Total and subscale scores at initial assessment and time of donation compared to 12–24-months post-donation, with scores improving over time ( $p < 0.05$ ).

**Discussion or Conclusions:** Results confirm the need to provide psychosocial support to siblings leading up to and at the time of their donation. Over time, however, siblings’ HRQL improve steadily.

### 654 | Is Cancer Coaching by telephone, using simple CBT techniques, an effective way to significantly improve the emotional wellbeing of people with cancer, post physical treatment?

*Gemma Holding*

**Background/rationale or Objectives/purpose:** Cancer patients often find that their emotional well-being begins to decline just as their physical well-being begins to improve. Depression is three times more likely in cancer patients than in the general public, and almost half of people with cancer report that the emotional effects are more difficult to cope with than the physical effects. In response to this Cancer Coach is a telephone based, peer support group that uses outcomes-focused CBT and relaxation tools in order to help participants to develop new self-help and coping strategies and improve their emotional wellbeing.

**Methodology or Methods:** Cancer Coach is open to adults in the UK who have already completed physical cancer treatment. Participants may be experiencing one or more emotional difficulties, such as depression, anxiety, fear or isolation. Every participant completes and returns pre and post-course assessments including completion of the Distress Thermometer before starting and after completing Cancer Coach.

**Impact on practice or Results:** Results thus far indicate that the overarching impact from Cancer Coach for participants as a result of the programme is they feel, less isolated about their cancer experience, more resilient to self-manage the emotional challenges of cancer and their mental wellbeing has improved overall. Ongoing research will add to this.

**Discussion or Conclusions:** Delivering cancer coaching by telephone in a peer support setting does not diminish the positive results gained from delivering CBT in person in a one to one setting. Therefore this delivery method offers an alternative to conventional interventions that is cost effective, scalable and convenient and markedly improves the wellbeing of cancer patients.

### 650 | Who Attends? Patient Interest in a One-Time Vaginal and Sexual Health Workshop Post-Cancer Treatment

*Roanne Millman<sup>1,2</sup>, Natalie Jacox<sup>1,2</sup>, Carly Sears<sup>2</sup>, John Robinson<sup>1,2</sup>, Reanne Booker<sup>2</sup>, Jill Turner<sup>3,4</sup>, Elisha Andrews-Lepine<sup>3</sup>, Ericka Wiebe<sup>3,4</sup>, Amy Driga<sup>3,4</sup>, Lauren Walker<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** Sexual difficulties and changes in vaginal health are common for women undergoing treatments for cancer, and can have a significant impact on quality of life and intimate relationships. The current study had two aims: 1) evaluate women's interest in, and attendance of, a group-based educational workshop designed to address vaginal and sexual health changes after cancer; 2) describe the characteristics and presenting concerns of interested women.

**Methodology or Methods:** Two hundred and eighteen women with a history of cancer expressed interest in receiving more information about the workshop and completed a brief telephone screen. Interested women (n = 156) completed an online questionnaire package focused on vaginal and sexual health and functioning prior to attending the workshop.

**Impact on practice or Results:** Approximately three quarters of the women who completed the phone screen ultimately attended the workshop. Clinically significant sexual distress was reported by 91% of participants, and 97% of sexually active participants exceeded the threshold for sexual dysfunction. Women within 1–2 years of diagnosis tended to report less sexual distress, less severe vulvovaginal symptoms, and less impact of symptoms, compared to women farther out from diagnosis. Further, while the majority of women described vaginal dryness and pain during intercourse, only a minority reported engaging in health promotion strategies (e.g., vaginal moisturizers) sufficient enough to expect symptom improvement.

**Discussion or Conclusions:** The current study suggests that a group-based educational workshop for vaginal and sexual concerns is acceptable to the majority of patients, and should not be restricted to women based on recency of diagnosis or treatment.

#### 643 | Innovations in Clinical Care: Spiritual Care in Oncology - Model of Care Project

*Dr. Philip Crowell<sup>1</sup>, Dr. Alan Bates<sup>2</sup>, Gina McKenzie<sup>2</sup>, Melanie McDonald<sup>2</sup>, Alison Cumming<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** This innovative project was created to develop a comprehensive, sustainable Spiritual Care Program at a Canadian Cancer Centre in British Columbia, with the intention to fill the gap in current services, particularly those related to spiritual distress, end of life, existential and faith-based issues.

**Methodology or Methods:** A literature review and needs assessment were conducted. The following will be measured: Linkages with community partners; Expansion of Internship Program; Increase in Direct Clinical services; Established Spiritual Health Rounds; Involvement in the development of MoH Elearning modules; Engagement in Spiritual Care research; and patient experience surveys.

**Impact on practice or Results:** A Spiritual Health Practitioner will be recruited to work as a Multi-Faith Clinician, providing patient-centered care focusing on values, beliefs, and practices related to the patient's ultimate reality, in order to promote wholeness, healing, meaning and purpose. This includes Psychological Screening follow-ups, Inpatient care, Outpatient sessions, and Group Program involvement. Patient Resources for spiritual care (videos, brochures, and website information, Multi-faith on-call list) as well as a Sacred Space are developed.

Multi-disciplinary staff are trained via Grand Rounds, small groups, educational videos, handouts on topics such as: Spirituality, Screening for Spiritual Distress, The role of a Spiritual Health Practitioner, Benefits of Spiritual Care, Grief and Bereavement. Staff Support is given through guided meditations, debriefs (Code Lavender) and a bereavement service.

**Discussion or Conclusions:** Discussion will focus on outcomes of the project to date and development of a model of spiritual care.

#### 632 | Impact of distress severity at diagnosis on overall mortality among non-small cell lung cancer (NSCLC) patients: A cohort study

*Genehee Lee<sup>1</sup>, Danbee Kang<sup>2</sup>, Gayeon Han<sup>1</sup>, Imryung Kim<sup>1</sup>, Eliseo Guallar<sup>3</sup>, Juhee Cho<sup>1,2,3</sup>, Young Mog Shim<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** Objectives: Lung cancer patients are more likely to experience distress than other cancer patients. Yet, there is limited evidence for impact of distress severity on mortality among NSCLC patients. To assess impact of distress severity at diagnosis on overall mortality among non-small cell lung cancer patients.

**Methodology or Methods:** Methods: This is a cohort study of 849 NSCLC patients whose distress was measured at diagnosis from June 2014 to December 2016 at a comprehensive cancer center in Seoul, South Korea. The NCCN Distress Thermometer and Problem List for Patients (Version2, 2018) was used to evaluate distress and specific problems causing distress. Cox regression was performed to evaluate the outcomes.

**Impact on practice or Results:** Results: Mean (SD) age was 61 years (10) and 62.3% were male. Of total, 21%, 44%, and 35% were localized, regional and distance cancers, respectively. Median distress was 5 (IQ range 4–7), and 43.7% patients reported severe distress ( $\geq 6$ ). Female, younger age, having emotional and physical problems at diagnosis were associated with severe distress. However, stage and performance status was not associated with distress severity. 3-year overall survival rate was 68.6%, and severe distress was associated with higher mortality (HR 1.34, CI 1.07–1.68) adjusting gender, age, disease stage and ECOG Performance Status at diagnosis, and tumor histology.

**Discussion or Conclusions:** Conclusions: Substantial number of NSCLC patients experience severe distress. Considering negative impact on mortality, further studies would be necessary to find predictors of clinically-significant distress at diagnosis. Health professionals also needs to recognize, monitor, document, and treat distress of NSCLC patient promptly at all stages of disease.

#### 629 | Association between distress at diagnosis and emergency room visit during treatment and shorter mortality among cancer patients

*Danbee Kang<sup>1</sup>, Ga Yeon Han<sup>2</sup>, Jung Won Park<sup>2</sup>, Im-Ryung Kim<sup>2</sup>, Jin Seok Ahn<sup>2</sup>, Juhee Cho<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** To evaluate association between distress at diagnosis and emergency room visit during treatment and short term mortality among cancer patients.

**Methodology or Methods:** This is a retrospective cohort study with 4,072 newly diagnosed cancer patients at a comprehensive cancer center in Seoul, South Korea from July 2014 to December 2016. NCCN distress thermometer with problem check list was used to measure distress and specific problems at diagnosis. Cox regression was used to evaluate association between distress and ER visit within 3 months and mortality.

**Impact on practice or Results:** Mean age was 57.6, 54.3% were male, and mean follow up was 1.1 years (0.7). Lung (23.4%) and stomach (20.7%) cancer were major cancer, and 39.1% were localized cancer. Of total, 45.3% (n = 1,846) had 6 or higher distress and younger and female patients had higher distress. However, distress level was not different depending on stage and performance status. Severe distress ( $>6$ ) was associated with more frequent ER visits within 3 months (HR = 3.37, 95% CI = 1.17, 1.72) and higher short-term mortality (HR = 1.06,

95% CI 0.89, 1.27). Among patients with normal performance status, severe distress was associated with much higher short-term mortality in stomach (HR = 3.37, 95% CI = 1.11, 10.29) and lung (HR = 2.18, 98% CI = 1.18, 4.04) cancer.

**Discussion or Conclusions:** About half of the newly diagnosed cancer patients experienced severe distress. Given the negative impact of severe distress on emergency room visit during treatment and short-term mortality, active monitoring and appropriate management of distress should be considered from diagnosis.

### 605 | « If I Can Help Other Families... »: Bereaved Parents' Interest in Becoming Resource Parents in Clinical, Training, Research and Support Activities in Pediatric Oncology

*Émilie Dumont<sup>1,2</sup>, Claude Julie Bourque<sup>2,1</sup>, Marc-Antoine Marquis<sup>2</sup>, Marie-Claude Levasseur<sup>2</sup>, Michel Duval<sup>2,1</sup>, Carol Beaudry<sup>3</sup>, Sylvie Cantin<sup>3</sup>, Lysanne Daoust<sup>2</sup>, Audrey Stypulkowski<sup>2</sup>, Serge Sultan<sup>1,2</sup>*  
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**Background/rationale or Objectives/purpose:** Many professionals in pediatric oncology wish to develop partnership activities with bereaved parents. Because these parents are considered a vulnerable population, there is uncertainty about the appropriateness of this type of collaboration and how to recruit them. As part of an extensive psycho-social survey, we interviewed bereaved parents about their interest in becoming resource parents.

**Methodology or Methods:** During the fall of 2018, an online questionnaire was completed by 32 mothers and 14 fathers (n = 46, mean age: 51) of 37 children who died of cancer in the Hematology-Oncology Service of CHU Sainte-Justine between 2000 and 2016.

**Impact on practice or Results:** 32 parents (70% of respondents, 8 fathers) are interested in participating in at least one form of activity: collaborate in future stages of the current investigation (30), other studies with families (27) and/or recruitment of parents for the current survey (16); give testimony in training activities (14); participate in quality of care committees (10), family support activities (9), pediatric oncology training design (8) and/or pediatric cancer advocacy (7). The majority of them suggest waiting 18 to 24 months after the child's death before recruitment.

**Discussion or Conclusions:** Findings show that it is feasible and relevant, at least two years after death, to ask bereaved parents if they wish to be resource parents, and that the majority of them have an interest in this role. Future studies should concentrate on the modes of supervision, training and support of resource parents.

### 593 | Preference of hair wig and its influence on quality of life among cancer patients receiving chemotherapy

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**Background/rationale or Objectives/purpose:** The significance of alopecia and preference of hair wigs, which is highly tabooed and stigmatized in a culturally built country like India is underexplored. This study attempts to investigate the awareness among patients about hair wigs, their preference and its impact on their quality of life.

**Methodology or Methods:** Patients (N = 294) with cancer, aged 13 and above, receiving chemotherapy were assessed for awareness and preference of hair wig, using an author-constructed interview schedule. Patients who preferred wigs were issued one, following the assessment of quality of life using CI-QoLQ, while 88 patients completed post assessment on completion of chemotherapy. The data thus obtained was analyzed using descriptive statistics, chi-square and Pearson's correlation.

**Impact on practice or Results:** Majority (94.2%) of the patients were aware of alopecia and reported psychological (27.9%) and social (40.8%) as major area of concerns. While only 53.1% perceived hair loss to be highly significant, 65% preferred to have wigged. There was a significant association between education and awareness about wig (p < 0.01) and preference for wig (p < 0.01). Preference for wig was significantly correlated with age (r = 0.220; p < 0.01), perceived significance of hair loss (r = 0.380; p < 0.01) and awareness of wig (r = 0.341; p = 0.000). Similarly, there was significant difference (p < 0.01, t = 6.856) in QOL of patients before and after usage of wig. Majority (64.7%) reported that the wig was very useful by means of attending social events, work and shopping.

**Discussion or Conclusions:** Alopecia is perceived as highly significant by patients receiving chemotherapy, while the use of wig enhances body image, interpersonal relationships and better quality of life

### 575 | Supporting women to live well with gynaecological cancers – national approach to influence service level change

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**Background/rationale or Objectives/purpose:** Systematic supportive care screening for all women with gynaecological cancer has been identified as a national cancer control priority in Australia through a number of strategic and policy frameworks.<sup>1,2,3,4</sup>

**Methodology or Methods:** Cancer Australia is undertaking a multi-year project to influence a nationally consistent approach to the uptake of best practice supportive care screening for women at specialist cancer and community support services across Australia.

Underpinned by the Principles of cancer control,<sup>5</sup> Cancer Australia has undertaken:

- a systematic literature review
- a national environmental scan
- national stakeholder engagement.

Informed by the evidence, current activity and strategic partnerships, Cancer Australia identified opportunities to influence nationally consistent approaches to systematic supportive care screening for Australian women with gynaecological cancer.

**Impact on practice or Results:** Cancer Australia to date has:

developed a screening tool (adapted NCCN Distress Thermometer and Problem Checklist)<sup>6</sup> and service level evidence-based guidance to support use across a range service settings

commenced a cross sectional study to validate the screening tool in a large sample of women with gynaecological cancers

formed strategic partnerships and collaborations to influence uptake across a range of service settings nationally, including clinical champions

developed a collaborative stakeholder engagement model and communication plan to continue engagement with key stakeholders to build support, explore pathways for implementation and influence national uptake.

**Discussion or Conclusions:** Cancer Australia is influencing a nationally consistent approach to supportive care screening across Australia's health system, through harnessing evidence, resource development, and a collaborative model that fosters system-wide engagement.

### 563 | Providing psychosocial support through a stepped-care approach: Measuring the impact on distress and unmet needs in young people affected by cancer

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**Background/rationale or Objectives/purpose:** CanTeen Australia provides psychosocial support to adolescents and young adults (AYAs; 12–25 years) impacted by a personal or familial cancer diagnosis. AYAs



report a variety of unmet cancer-related support needs and associated distress. CanTeen provides individual psychosocial support through a comprehensive assessment, triage and review process and a stepped-care approach to service delivery.

**Methodology or Methods:** Comprehensive psychosocial assessment completed at service entry includes a modified HEADSS assessment, Kessler Psychological Distress Scale-10 (K10) and a situation-specific Cancer Needs Instrument. An individual support plan is developed and the young person is triaged into one of four service streams, which offer increasing service intensity to meet increasing clinical need. Routine progress and outcome monitoring is completed at six months. Changes in distress and unmet needs are measured for AYAs in each service stream.

**Impact on practice or Results:** Matched baseline and review assessments were completed by 417 young people from July 2016 to December 2018 (age M = 15.9 years; 60% female; 20% personal cancer diagnosis; 59% familial cancer diagnosis; 21% bereaved). Higher distress and unmet needs were reported by AYAs triaged into higher intensity service streams. By review, AYAs in the universal, coordinated and therapeutic service streams reported statistically significant reductions in distress and unmet needs.

**Discussion or Conclusions:** CanTeen's comprehensive psychosocial assessment and stepped-care support is essential for efficiently and effectively supporting AYAs at their level of clinical need. Routine monitoring allows CanTeen to target distress and unmet needs at individual and organisational levels and ensures AYAs are placed at the centre of their care.

## 562 | Uncertainty experienced by adults undertaking cancer genome sequencing: Systematic review

*Nicci Bartley<sup>1</sup>, Phyllis Butow<sup>1</sup>, Christine Napier<sup>2</sup>, Megan Best<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** While genome sequencing (GS) provides new opportunities in clinical practice, the complexity of these technologies generate uncertainties. The aim of this systematic review was to determine what is currently known about the patient experience of uncertainty when undergoing cancer GS.

**Methodology or Methods:** A comprehensive search of 5 databases between 2001 and 2018, for research reporting patient uncertainty in relation to cancer GS was conducted, yielding 6,247 records. After removing duplicates 4,892 records were screened by title and abstract, 107 full articles were assessed for eligibility, and 10 studies were included for data extraction and quality appraisal. Qualitative studies were subjected to thematic analysis, while quantitative data were summarized using descriptive statistics. Both data sets were then merged for the final synthesis.

**Impact on practice or Results:** Multiple conflicting uncertainties can exist for patients undergoing cancer GS. Factors affecting uncertainty include poor genomic literacy, health professionals' approach, and type of GS result. Quantitative data showed no difference in uncertainty levels based on the type of GS results, however, the qualitative synthesis found that patients who received uncertain GS results subsequently reported feeling more uncertain. Patients reported feeling disappointed and frustrated by uncertainty, however they coped with their uncertainty by adopting risk management strategies and information seeking.

**Discussion or Conclusions:** This systematic review highlights the need for more research to better understand the experience of patient uncertainty across the GS process, as well as long-term impacts of uncertainty. The current evidence base described here can assist health professionals to identify and address patient uncertainty in this context.

## 559 | The Impact of the Distress Assessment and Response Tool (DART) on Suicide Outcomes at the Princess Margaret Cancer Center (PM)

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**Background/rationale or Objectives/purpose:** Suicide is 2–3 times more common among patients with cancer than in the general population. For this reason, a suicidal intention screening item was incorporated into the Distress Assessment and Response Tool (DART), a distress screening tool administered routinely at the Princess Margaret Cancer Centre (PM) since 2010. In the first study of its kind, we have evaluated the impact of DART on suicide assessment and outcomes.

**Methodology or Methods:** Retrospective chart audits were conducted on clinician response to suicidal intention reported on DART between 2011–2017. Sociodemographic and suicide completion data were extracted from hospital and provincial cancer registries for cancer patients who attended PM between 2005–2014. Propensity for DART completion, accounting for age, sex, income, marital status, cancer type and stage, with inverse probability treatment weighting (IPTW) analysis were calculated to estimate the effect of DART completion on completed suicides.

**Impact on practice or Results:** Between 2011–2017, 505 patients (0.71% of patients screened) endorsed suicidal intention on DART, but clinician assessment of suicidal intention and referrals for psychosocial intervention only occurred in 9.1% and 11.7% of them, respectively. Between 2005–2014, there were n = 94 suicides. DART non-completion was associated with a higher incidence of suicide (hazard ratio [HR] 24.8; 95% CI 23.8–25.9) compared to DART completion.

**Discussion or Conclusions:** DART completion is associated with a significantly lower incidence of completed suicides, unlikely related to direct clinical intervention from suicide screening. DART completion may indirectly reduce suicide incidence through earlier intervention for emotional distress, but the benefit of early response to reports of suicidal intentions requires further exploration.

## 558 | Standing at the edge of death: Coping with the devastating carotid blowout in patients with head and neck cancers--The perspectives of family, patients and medical staffs

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**Background/rationale or Objectives/purpose:** Carotid blowout (CB) is a fatal event to patients with squamous cell carcinoma of head and neck (SCCHN). The mortality rate of CB is 40%. Furthermore, the CB recurrent rate is high. The CB survivors may suffer from neurologic sequela after massive bleeding, even become bedridden. Both patients and the families experienced highly stressful emotion. To help them facing the last weeks/months of their life is an important issue.

**Methodology or Methods:** We surveyed SCCHN patients in Keelung Chang Gung Memorial Hospital during Sep. 2018~ Aug 2019. The patients who experienced CB and survived would be visited by health-care professionals, including physicians, psychologists, social workers, palliative care nurse specialists. The professionals assessed patients' distress thermometer (DT), pain visual analogue scale (VAS), Eastern Cooperative Oncology Group performance status (ECOG PS). Our social workers/psychologists interviewed the patients and families, also assessed families' DT.

**Impact on practice or Results:** Four patients experienced CB between Sep. 2018 and Mar. 2019. They are all male, married, age 51~ 62, DT 5~ 7, pain VAS 3~ 7, ECOG PS 1~ 2. All four encountered existential

anxiety. Three of 4 patients' wives experienced anticipatory grief, the other one suffered in stressful family conflict. Holistic care is important for patients in such difficult situations.

**Discussion or Conclusions:** There are several efficient way to help CB patients and their family, Empowerment, coping skills of facing unpredictability of repeated CB, meaning-centered psychotherapy and consolidating communication skills of healthcare professionals. Further CB patients will be enrolled till Aug. 2019. The final results will be presented in 2019 IPOS annual conference.

### 557 | The influence of Social Support on Biophysical Outcomes in Hematopoietic Stem Cell Transplantation. A scoping review of the literature

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**Background/rationale or Objectives/purpose:** Hematopoietic cell transplant (HCT) programs have been increasingly reliant on the patient's social support for post-HCT care. Additionally, social support has been associated with post-HCT outcomes. We performed a scoping review to identify articles that evaluate social support and biophysical HCT outcomes.

**Methodology or Methods:** Using the OVID interface, we searched MEDLINE, EMBASE, CINAHL and PSYINFO and EBM Reviews as well as Google Scholar on 03 April 2019 using the following broad search concepts and terms: 1) Hematopoietic Stem Cell Transplantation, 2) Social Support and 3) Outcomes. Further, the bibliographies of the pertinent studies were reviewed to identify additional manuscripts.

**Impact on practice or Results:** We identified 16 articles: 9 published manuscripts, 6 conference abstracts and 1 unpublished dissertation. Social support was inconsistently defined, measured using an assortment of scales, at different time points with differing statistical adjustments for outcomes. The sample size of the studies ranged from 31 to 715 participants with median follow-ups of between 6–7 days and 82 months. Eleven of the studies evaluated Overall Survival with one study examining infectious risk. Two studies assessed acute and chronic Graft-Versus-Host-Disease and 3 studies evaluated relapse. There were 4 abstracts focusing solely on serum biomarkers.

**Discussion or Conclusions:** Future research should aim to disentangle the elements of social support, including actual versus perceived; instrumental versus emotional; and partner versus family member versus general social support that impact survival. It will be important to understand if there is a critical time point for quantity and type of social support.

### 554 | Predisposing, Precipitating, Perpetuating and Protective Factors Related to Distress in Family Members of Children with Cancer: A Systematic Review

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**Background/rationale or Objectives/purpose:** Objectives: To identify factors related to psychological distress (i.e., anxiety, depression, somatization, and post-traumatic stress symptoms) in family members (e.g., siblings, parents, grandparents) of pediatric cancer patients on active treatment.

**Methodology or Methods:** Methods: A systematic review was conducted in the following academic databases: MEDLINE, CINAHL, EMBASE, PsycINFO, ERIC, and Cochrane Library from the date of database inception to May 2018. Peer-reviewed quantitative and qualitative articles examining distress as an outcome in family members of pediatric cancer patients on active treatment were included. Two authors independently screened the titles and abstracts of the 9917 articles retrieved. 290 full-text articles were screened by two authors. Articles included in the review underwent quality appraisal using the Mixed-Methods Appraisal Tool and data extracted. The 4Ps model of case formulation was applied as a theoretical framework to organize factors related to family member distress as: predisposing, precipitating, perpetuating, and protective.

**Impact on practice or Results:** Results: Preliminary findings revealed 27 articles eligible for study inclusion (26 quantitative, and 1 qualitative). A narrative description of the predisposing, precipitating, perpetuating, and protective factors related to family member distress will be presented in the systematic review.

**Discussion or Conclusions:** Clinical Implications: This review will support: (1) healthcare professionals in the recognizing psychological distress in family members of children with cancer on active treatment to enable treatment; and (2) the appropriate development and timing of interventions specific to the chronological manifestations of psychological distress within this population.

### 547 | Cancer patients' views and understanding of genome sequencing: a qualitative study

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**Background/rationale or Objectives/purpose:** Little is known about knowledge of, and attitudes towards, germline genome sequencing (GS) among individuals with a personal history of cancer. This qualitative study aimed to investigate knowledge and attitudes of individuals previously diagnosed with a cancer of likely genetic origin, who are undertaking GS.

**Methodology or Methods:** Participants were adults with a cancer of likely genetic etiology who had recently consented to undergo GS as part of a larger genetic study. Semi-structured interviews were conducted with purposively selected participants (n = 20) from the Psychosocial Issues in Genomic Oncology (PiGeOn) study, just after providing a blood sample for GS. Interviews were audio recorded, transcribed and analysed using thematic analysis.

**Impact on practice or Results:** Analysis identified three main themes: understanding of genomics; motivation; and decision-making. Whilst motivations such as obtaining health information about self and family appear to be the main drivers for undertaking GS, these motivations are sometimes based on limited knowledge and therefore create unrealistic expectations of the accuracy and utility of GS. This in turn can prolong the deliberation process and lead to ongoing decisional conflict about undergoing GS.

**Discussion or Conclusions:** Understanding the degree and nature of patient understanding of GS, as well as attitudes and decision-making

processes of individuals interested in pursuing GS, will enable health care professionals to manage patient expectations and adequately engage and support patients to make an informed decision when pursuing GS.

### 535 | Evaluation protocol for patients admitted for chemotherapy/radiotherapy treatment in the Psycho-Oncology Service of Campinas Oncology Center using the Psychological Risk Indicator in Oncology (IRPO) Psychological Risk Indicator in Oncology

*Fabiana Marthes Molli Caron, Giovana Zaparoli de Oliveira, Fernando Medina da Cunha, André Augusto J G de Moraes, Mary Da Silva Thereza*  
Campinas Oncology Center, Campinas, Brazil

**Background/rationale or Objectives/purpose:** Evaluate the psychological risk of patients admitted to begin chemotherapy and radiotherapy treatment in Campinas Oncology Center.

**Methodology or Methods:** Patients admitted from January to June 2018 for chemotherapy and radiotherapy treatment who had been diagnosed with a few types of cancer at Campinas Oncology Center were evaluated by the Psycho-Oncology Service through the usage of the Psychological Risk Indicator in Oncology (IRPO).

The PRIO is a psychological screening tool designed and validated in Brazil to identify oncological patients at risk of bad adaptation, making it possible for them to be precociously referred to psychological support. It comprises four parts: part A – Perception of the disease, part B – Instrumental Social Support and Emotional Social Support, part C – Active Coping and part D – Current Distress.

Patients that reach 55 points or more in the General Risk Index (GRI) are considered of psychological risk.

**Impact on practice or Results:** Three hundred forty-three patients were evaluated. Fifty-eight of these patients reached 55 points or more, averaging 70,26% points.

As for the patients that presented psychological risk, 71% of them were women.

30% of these patients had breast cancer, 11% had head and neck cancer, 11% had breast metastatic cancer.

**Discussion or Conclusions:** IRPO used as an evaluation and psychological triage tool can contribute in that it identifies patients at risk of bad adaptation and promotes their care in active psycho-oncology services in cancer treatment centers, providing them with psychological support during chemotherapy and radiotherapy treatment. Therefore, the patient's emotional state improves and that can contribute to the quality of care provided in oncology.

### 500 | Psychosocial distress and utilization of psychooncological care in National Comprehensive Cancer Centers (CCCs) in Germany

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**Background/rationale or Objectives/purpose:** The study aimed to assess cancer patients' use of psychological care and its correlates in a large sample of cancer patients in Comprehensive Cancer Centers (CCCs) in Germany.

**Methodology or Methods:** In a multicenter study in Germany, cancer patients with various diagnoses were evaluated for self-reported use of psychological support. We measured psychological distress, depression and anxiety, quality of life and social support with standardized questionnaires and analyzed its association with the utilization of psychological care using multivariable logistic regression. Patient were assessed during inpatient care (t1) combined with follow-up assessments after 6 (t2) and 12 months (t3).

**Impact on practice or Results:** N = 3054 (50 %) of hospitalized patients were asked for participation and n = 1,632 (53.6 %) participated. We were able to analyse n = 1,398 (45.9%) patients. N = 397 (28.4%) of the sample utilized psychological support. Users of psychological care were significantly younger than non-users (OR: 0.967; p < .001) and were more often female (OR: 1.878; p < .001). In the multivariable analysis, effects on the use of psychological care were observed for HADS anxiety (OR: 1.106, p = 0.001) and both subscales of the SF-12 quality of life measure (mental, OR: 0.97; p = 0.002; physical, OR: 0.97; p = 0.002). There were only small changes in user rates of outpatient psychological care at the follow-ups (t2 and t3).

**Discussion or Conclusions:** Psychological distress and anxiety are higher and quality of life lower in users of psychological care in comparison with non-users. Although psycho-oncological services should be provided to all patients who need them, special efforts should be made to reach populations that report low utilization.

### 497 | 'Get Set 4 Surgery': An innovative multidisciplinary physical and psychological prehabilitation programme to support patient self-management and improve surgical outcomes for major cancer surgery

*Sabil Suleman, Carolyn Johnston, Puneet Ranote, Ben Ayres, Katie Bluer, Marion Beer, Tanya Pendleton, Jonathan Da Costa*  
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**Background/rationale or Objectives/purpose:** Prehabilitation is an effective way to reduce complications and improve outcomes by improving health prior to major surgery. Psychological factors have a proven short and long-term impact on both physiological and psychological surgical outcomes. Addressing these factors pre-operatively for cancer surgeries holds significant promise and has driven the development of our innovative prehabilitation programme.

**Methodology or Methods:** After a consultation event with cancer patients and visits to similar schemes, our multidisciplinary team designed and implemented a pilot patient prehabilitation teaching session. Theoretical psychological drivers included a desire to normalise distress, minimise anxiety and depression, enhance coping skills, improve self-efficacy and foster attachment with the healthcare team. The 'Get Set 4 Surgery' session is delivered weekly by an anaesthetist, surgeon, psychologist, dietitian, physiotherapist and cancer nurse specialist, all working within the cancer pathway. We also developed supplementary multimedia materials, including literature (information booklet and patient diary), a patient pathway video and a prehabilitation animation.

**Impact on practice or Results:** Since November 2017, we have delivered the session to 346 patients (and 215 carers/family). Outcomes



from session evaluations, post-surgery/discharge qualitative interviews and surgical outcome metrics (e.g. post-surgery mobilisation) have all been promising. More timely referrals to specialist psycho-oncology have also been observed, facilitating earlier psychosocial intervention. The pilot programme has now been integrated as part of routine care for cancer surgeries.

**Discussion or Conclusions:** Lessons have been learned around optimal session delivery and integration of a service-spanning intervention into complex surgical pathways. Next steps include quantitative evaluation of the aforementioned psychological constructs along the pathway e.g. anxiety, depression, self-efficacy and attachment.

#### 495 | Psychological distress and depression in hospitalized patients with gastrointestinal cancer

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**Background/rationale or Objectives/purpose:** Cancer diagnosis and treatment can be extremely stressful. In Taiwan,

Gastrointestinal cancers are of high incidence and high mortality. The patient's psychological stress is affected by many physical symptoms, worried about treatment effectiveness and frequent hospital visits.

The purpose of this study was to explore the psychological distress and depression in hospitalized patients with gastrointestinal cancer.

**Methodology or Methods:** This cross-sectional design was used with a purpose sampling. Data collected with patients' demographics and clinical characteristics, performance status, modify Edmonton Symptom Assessment System, psychological distress (measured with Questionnaire on stress in Cancer patients revised version, QSC-R23) and depression status (measured with Patient Health Questionnaire-9, PHQ-9).

Data were analyzed by descriptive statistics, one-way ANOVA, and Pearson's correlation.

**Impact on practice or Results:** A total of 88 participants were recruited. 76.1% were male. 43.2% of had Hepatocellular carcinoma, and 30.7% colon cancer.

The total average QSC-R23 score and depression were moderately correlated with physical symptom distress score ( $r = 0.56$ ,  $p < 0.001$ ,  $r = 0.62$ ,  $p < 0.001$ ).

For the QSC-R23 subscales, the most stressful situation was "everyday life restrictions" and "fear". The "everyday life restrictions" and "fear" were significantly associated with metastasis of cancer, performance status of patients and physical symptom distress. Depression was significantly associated with the above factors.

No significant associations were found between demographic variables and total psychosocial distress, and no significant difference between cancer sites.

**Discussion or Conclusions:** Patient psychological distress and depression will increase with disease progression. The findings suggest that the medical team must provide more psychological support in the advanced phase of the cancer trajectory.

#### 494 | The Parent – Tot Group: A New Model for Supporting Parents with Cancer and Their Young Children

*Sara Hankinson*

BC Cancer, Vancouver, Canada

**Background/rationale or Objectives/purpose:** For around 30 years, BC Cancer has offered a support group for kids aged 5–12 with a family member living with cancer. The group includes art therapy, counseling for parents, and an educational lesson on cancer and treatments for children.

Resources for children older than 12 have also been developed, but prior to this group no supports were available for families with children younger than five—besides a parents guide for communicating about cancer.

The idea for this group was proposed by three young parents who attending a Young Adults Group at BC Cancer.

**Methodology or Methods:** The pilot Parent – Tot Group ran in April 2019. It included a time of free play, a circle time including songs and a story, and an art activity for children to participate in with parental support. Coffee and healthy snacks were also offered.

The environment was informal and parents weren't required to share anything about their cancer.

**Impact on practice or Results:** All five of the families who attended the pilot expressed the desire to attend again and have it become available for more young families. Two more group sessions are planned. Feedback from each group will be compiled and the structure will be formalized for the group beginning in the Fall of 2019.

**Discussion or Conclusions:** A thorough review of the research and current services available to young families has yet to be done, but it seems like there is a demand for services for this population. Given the success of the pilot group, we expect this to become an ongoing group.

#### 462 | Advantage of using the experience of cancer patients/survivors for the education of pharmaceutical students

*Chiaki Ihara*

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**Background/rationale or Objectives/purpose:** Severe image of cancer treatment is mainly attributed to that of chemotherapy. Patients should endure long-term chemotherapy with severe side effects. As all anticancer drugs are prepared by pharmacists, psychological support from them would be very helpful for the patients. However, the pharmaceutical education tends to focus and emphasize the physical and chemical aspects of the diseases and pay little attention for the psychological viewpoints, and this makes it very difficult for pharmacists to behave empathically.

The author tried to evoke empathetic understanding of the cancer patients in pharmaceutical students using the experiences of cancer patients such as documentary, books, blogs and so on.

**Methodology or Methods:** In several pharmaceutical classes (age 18–19 and 22–23), videos reporting the lives of cancer patients and blogs written by Mao Kobayashi were used to inspire the empathetic feeling for the cancer patients. Scenes describing the impact and severeness of anticancer drugs are chosen and some explanations were added by the author to deepen their feeling. After watching and reading, the students were asked to write a report about the role of pharmacists.

**Impact on practice or Results:** All the students could understand the patients' various emotions for the chemotherapy from the viewpoints of the patients and were eager to become such pharmacists that accompany the patients all the way of treatment. They also found the expected attitude of medical staff from the descriptions of doctors and nurses shown there.

**Discussion or Conclusions:** This method is very effective and helpful to promote the empathetic understanding of cancer patients and develop pharmacists as a helping profession.

#### 450 | An Initial Validation of a Brief Anxiety and Depression Tool in Adult Cancer Patients

*Meagan Dwyer, Kadie Harry*

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**Background/rationale or Objectives/purpose:** Many cancer patients experience significant anxiety and depression throughout their treatment course. Brief tool to screen for these concerns are needed in the fast-paced oncology setting, especially as mental health resources may be limited. The current study examined validation of a brief tool to aid in assessment, triage, and treatment of cancer patients.

**Methodology or Methods:** Patients (N = 1197) completed an initial intake with a member of the psycho-oncology team at an NCI-designated cancer center. Patients completed a demographic form, a 3-item anxiety screener and a 4-item depression screener. Reliability estimates using Cronbach's alpha were used to assess internal consistency for the scales and bivariate correlations were conducted to assess convergent validity.

**Impact on practice or Results:** Participants were predominantly female (67.6%) with a mean age of 54.7 years (SD = 13.7) and one quarter had breast cancer (26%). Results indicated that both the anxiety and depression scales showed good reliability ( $\alpha = .87$ ,  $\alpha = .89$ , respectively), and were significantly positively related ( $r = .67$ ,  $p < .001$ ), indicating good convergent validity.

**Discussion or Conclusions:** The current tool demonstrated strong internal reliability and convergent validity in a large and diagnostically diverse sample of cancer patients. Rapid assessment with use of this brief tool can aid in triage of patients to appropriate mental health resources, and may guide treatment goals. While there are several brief scales available, many focus on either depression or anxiety exclusively. The current tool has potential to quickly assess both common symptom areas. Continued scale evaluation is planned.

#### **431 | Are patients' treatment preferences and unmet emotional needs discussed in routine multidisciplinary team meetings: cross-sectional survey data from 97 Australian cancer service representatives**

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**Background/rationale or Objectives/purpose:** Many cancer patients receive care that is not consistent with their preferences or responsive to emotional needs. Multidisciplinary team meetings (MDTs) can facilitate coordination and include the health professionals needed for supportive care. This cross-sectional study aimed to provide data on the degree to which MDTs discuss patient preferences and emotional well-being.

**Methodology or Methods:** We approached representatives from 240 Australian cancer services to complete online surveys exploring: service characteristics, distress management practices, MDT attendance, how often treatment preferences and emotional needs were discussed, and if these two topics could be better incorporated into MDTs. Responses were analysed using descriptive statistics.

**Impact on practice or Results:** 122 representatives participated (51% response) of which 97 completed MDT-specific items. A small proportion (14%) reported there was no MDT in operation and 22% did not attend MDTs at their service. Of the 62 representatives who attend MDTs, only 27% reported the MDT always discussed treatment preferences and emotional well-being; 11% reported the topics were rarely or never included. The remaining representatives reported the topics were often (37%) or occasionally (24%) incorporated. The majority (61%) believed MDTs could improve the way in which patients' preferences and emotional well-being are incorporated. Of the 46 services with routine distress screening processes (74%), 60% believed MDTs could better incorporate this information.

**Discussion or Conclusions:** Few cancer services were consistently including patient treatment preferences and emotional well-being in MDT discussion and the majority of representatives reported an improvement opportunity in this area. The next step is to identify a time-efficient manner of incorporating these conversations into multidisciplinary care.

#### **430 | Psychological and emotional help-seeking in men with prostate cancer: The role of age and masculinity**

*Belinda Goodwin<sup>1,2</sup>, Suzanne Chambers<sup>3,4,1,2</sup>, Michael Ireland<sup>1</sup>, Nicholas Ralph<sup>5,2</sup>, Jeff Dunn<sup>1,2,3,6</sup>*

<sup>1</sup>University of Southern QLD, Springfield, Australia; <sup>2</sup>Cancer Council Queensland, Fortitude Valley, Australia; <sup>3</sup>University of Technology, Sydney, Australia; <sup>4</sup>Menzies Health Institute, Griffith University, Southport, Australia; <sup>5</sup>University of Southern QLD, Toowoomba, Australia; <sup>6</sup>University of QLD, Brisbane, Australia

**Background/rationale or Objectives/purpose:** Men with prostate cancer (PCa) often experience significant psychological distress due to the unique challenges associated with the disease and treatment side effects including impairments to urinary, bowel, and sexual functioning. Evidence suggests that certain masculine traits are barriers to seeking help for psychological concerns, creating a potential challenge for the effective delivery of support to men with PCa. This study investigates the psychological help-seeking behaviour of PCa survivors over time, examining the role of demographic characteristics and masculinity.

**Methodology or Methods:** Men with localised PCa (n = 225), recruited through the Queensland Cancer Registry, completed a questionnaire at three time points. Measures included demographic and disease characteristics, the five factor Masculinity in Chronic Disease Inventory (MCD-I), the Supportive Care Needs Scale (SCNS-SF34) and psychological help-seeking behaviour.

**Impact on practice or Results:** Only 33% of men (n = 25) who reported psychological supportive care needs sought help within 12 months. Younger men were more likely to seek help. No main effect of masculinity on help seeking was evident across the five factors. However, an optimistic approach was negatively associated with help seeking over time for those with higher psychological care needs ( $z = 7.25$ ,  $p = .007$ ).

**Discussion or Conclusions:** Interventions are needed to increase psychological help-seeking in men with PCa, particularly in those who are older. Although, masculinity appears to be largely unassociated with psychological help-seeking, an overly optimistic approach to overcoming challenges may act as a barrier for men with PCa with the highest level of psychological care needs.

#### **422 | Integrating Supportive Care Screening and Assessment into Routine Clinical Care**

*Erin Forbes<sup>1</sup>, Kerrie Clover<sup>2,1</sup>, Debra Cook<sup>2</sup>, Yolande Cox<sup>2</sup>, Catherine Johnson<sup>2</sup>*

<sup>1</sup>University of Newcastle, Newcastle, Australia; <sup>2</sup>Calvary Mater Hospital, Waratah, Australia

**Background/rationale or Objectives/purpose:** During 2007 to 2011 Calvary Mater Newcastle screened oncology outpatients for pain and distress using a program called QUICATOUCH (QUick Individually Customised Assessment using TOUCH screens). When the QUICATOUCH project support ceased; the Breast, Lung and Gastrointestinal Cancer Nurse Coordinators (CNC) at the Calvary Mater Newcastle Hospital integrated screening into their model of care. This project aimed to facilitate the integration of supportive care screening and assessment into routine clinical care.

**Methodology or Methods:** The screening tool included adapted tools from the QUICATOUCH model, combined with the Palliative Care Collaboration Symptom Assessment Scale. On completion of the screening tools the CNC completed a comprehensive assessment with patients and carers, and provided appropriate nursing interventions or referrals to members of the multidisciplinary team.

**Impact on practice or Results:** Between Feb 2014 and July 2017 there were 765 occasions of screening recorded electronically. Demographics: 58% female, age range 21 – 91, 61% married, 2% cultural and linguistically diverse, 3.1% Aboriginal and Torres strait islander. Gastrointestinal 49%, lung 13%, breast 27% and other cancer 11%.

Common problems recorded were fatigue (53%), pain (50%), worry (56%), distress (39%), nervousness (38%), fears (39%), sleep (30%), eating (29%) and sadness (27%).

One quarter of patients (24.8%) received at least one referral to allied health including psychology, social work, dietetics and occupational therapy.

**Discussion or Conclusions:** This project provides an example of integrating screening for distress and other problems into routine clinical care. The data demonstrates that the CNC service is appropriately being referred more complex patient groups. This screener has now been incorporated into the electronic medical record.

#### **412 | Characteristics and Psychosocial Referral Reasons of Breast, Lung and Colorectal Cancer Patients in the Waikato Region of New Zealand**

*Tania Blackmore<sup>1</sup>, Elaine del Mundo-Ramos<sup>2</sup>, Brittany Ryan<sup>1</sup>, Lynne Chepulis<sup>1</sup>, Chunhuan Lao<sup>1</sup>, Vanessa Burrett<sup>3</sup>, Jenny McCleery<sup>3</sup>, Ross Lawrenson<sup>1</sup>*

<sup>1</sup>University of Waikato, Hamilton, New Zealand; <sup>2</sup>University of Auckland, Auckland, New Zealand; <sup>3</sup>Waikato District Health Board, Hamilton, New Zealand

**Background/rationale or Objectives/purpose:** New Zealand has a high incidence of breast, lung and colorectal cancer, and outcomes for lung and colorectal cancer are poor, particularly for Māori - the indigenous peoples of New Zealand. With psychosocial support for cancer only a recent government initiative, we investigated the characteristics and referral reasons of breast, lung and colorectal cancer patients referred to the Cancer Psychosocial Support Service (CPSSS) in the Waikato region.

**Methodology or Methods:** The characteristics of patients referred to CPSSS from 2016–2018 were assessed along with reasons for referral.

**Impact on practice or Results:** Only 10% of breast, 7% of lung and 4% of colorectal cancer patients were referred to CPSSS. Referred breast cancer patients were younger, more likely to have early stage cancer, and were more likely to have received a mastectomy, no surgery, or radiotherapy. Referred lung patients were younger, had never smoked, were more socially deprived and had stage III-IV disease. Referred colorectal patients were older and more likely to have stage IV cancer. No significant inequity for Māori was shown. Breast and lung patients were mostly referred for treatment concerns, while colorectal patients were primarily referred for emotional problems and difficulty adjusting to their diagnosis.

**Discussion or Conclusions:** Patient characteristics differed by type of cancer. The later stage of lung and colorectal cancer patients may reflect the poorer prognosis and specific support needs of these patients. While Māori inequity in healthcare is well documented, we showed no inequity in the numbers of Māori and non-Māori referred. However there may still be a need to further ensure equal access to psychosocial services.

#### **409 | Improving Access to Psychosocial Support: A Quality Improvement Initiative**

*Janelle Desjardins, Jennifer Thompson-Croft, Olivia Doré*  
*The Ottawa Hospital Cancer Centre, Ottawa, Canada*

**Background/rationale or Objectives/purpose:** The Office of the Auditor General of Ontario released the 2017 Annual Report that highlighted insufficient and inconsistent psychosocial oncology services for cancer patients, recommending that Cancer Care Ontario work with hospitals to develop a long-term plan to finance and expand PSO services. It is in this context that the Psychosocial Oncology Program (PSOP) at The Ottawa Hospital (TOH) undertook a quality improvement project aimed at reviewing the current referral triage process to access PSO services so that patients receive the appropriate services within the expected timeframe to meet provincial wait times.

**Methodology or Methods:** Using TOH's Innovation Framework and PDSA cycles, the PSOP team adopted a new access model where an intake social worker calls each patient within two weeks of the receipt

of referral to review the reason for referral, assess for acute distress, and provide appropriate intervention. If further needs are identified, patients are scheduled with a social worker who can provide ongoing support as needed. To evaluate the effectiveness of this change, PSOP continues to monitor wait times, and assess quality by means of patient and clinician surveys.

**Impact on practice or Results:** Since implementation of the new model, wait time measures have increased significantly from 39% to 70% of patients receiving meaningful contact by a social worker within two weeks of the referral. Clinician and patient surveys are ongoing, with preliminary results showing a positive effect.

**Discussion or Conclusions:** Ongoing evaluation is being completed to further refine and optimize the intake model to ensure long-term sustainability.

#### **406 | Reaching Rural Populations: Overcoming the Challenges of Resistance to Mental Health Care through Collaboration**

*Kaleena Chilcote*

*West Virginia University Cancer Institute, Morgantown, USA*

**Background/rationale or Objectives/purpose:** Despite consistent evidence revealing that people diagnosed with cancer in rural populations have high levels of psychological distress and comorbidities that are amenable to mental health treatment, there continue to be significant barriers to receiving appropriate mental health care. This often includes stigma toward mental health care that impacts patient engagement.

**Methodology or Methods:** When faced with the opportunity to develop a comprehensive psychosocial oncology program in an Appalachian cancer center, interviews were conducted with clinical staff involved in the care of patients with cancer from a wide range of fields. These interviews, as well as interactions with patients during early program development, led to the identification of common patterns that have helped provide a framework for increasing patient engagement in mental health care during cancer treatment and survivorship.

**Impact on practice or Results:** We will highlight clinical, research, and educational strategies that have been developed including specific modifications to patient visits, availability of online and print materials, founding of a multidisciplinary supportive care program, involvement in interdisciplinary education, outreach to stakeholders in the community, and more.

**Discussion or Conclusions:** Although implementation of strategies to improve patient engagement has led to a significant increase in patient volume within the psychosocial oncology program, stigma toward mental health care remains in our surrounding communities. Current work is being done through patient and provider survey studies to increase our understanding of patient distress and attitudes toward mental health care, opportunities for telemedicine are being considered, and additional strategies to increase patient engagement through specialty programs are being trialed.

#### **404 | Living with Prostate Cancer: A Group Therapy Intervention to Alleviate Psychological Distress in Men with Prostate Cancer**

*David Kuhl<sup>1,2</sup>, Kevin Lutz<sup>3</sup>, Eugenia Wu<sup>2</sup>, Olga Arsovska<sup>2</sup>, Lindsay Hedden<sup>4,2</sup>, Phil Pollock<sup>2</sup>, Maria Spillane<sup>2</sup>, Monita Sundar<sup>2</sup>, Larry Goldenberg<sup>1,2</sup>, Celestia Higano<sup>5,1,2</sup>*

<sup>1</sup>Department of Urologic Sciences, University of British Columbia, Vancouver, Canada; <sup>2</sup>Vancouver Prostate Centre, Vancouver, Canada;

<sup>3</sup>Education and Counselling Psychology, and Special Education, Faculty of Education, University of British Columbia, Vancouver, Canada; <sup>4</sup>School of Population and Public Health, University of British Columbia, Vancouver, Canada; <sup>5</sup>University of Washington, Fred Hutchinson Cancer Research Centre, Seattle, USA



**Background/rationale or Objectives/purpose:** **Background:** Many men diagnosed and treated for prostate cancer (PC) experience psychological distress. Frequently, men do not seek psychological support. To address this, the Prostate Cancer Supportive Care (PCSC) program at the Vancouver Prostate Centre initiated the Living with Prostate Cancer (LPC) Program.

**Methodology or Methods:** Methodology: LPC utilizes a small-group, life review format to develop a cohesive working group, learn communication skills, and understand and address life stressors (e.g. grief, depression, altered sense of self and relationships with partners). Men enrolled in PCSC were invited to participate in the LPC program for 3 consecutive weekly sessions and a half-day follow up 3 months later. Questionnaires (Beck Depression Inventory, Personal Attributes Questionnaire, Masculine Behaviour Scale, and the Warwick-Edinburgh Mental Well-being) assessing depression/anxiety symptoms, masculinity, and overall well-being were administered at Days 1 and 3, as well as at 3-, 6-, and 12-months. In order to evaluate this program, a focus group was conducted at 3 months and individual telephone interviews were conducted after 12 months.

**Impact on practice or Results:** Impact on practice: All 42 men enrolled between Oct 2016 and Mar 2018 completed the program. 94% of questionnaires were completed. Results show a trend toward diminished depression, a significant reduction in excessive concern with attaining success and a statistically significant increase in overall well-being. Focus groups identified valuable features of the program.

**Discussion or Conclusions:** Discussion: Provision of psychological support by means of a group life review process is a valuable strategy for men with prostate cancer. Program content will be described in detail and qualitative and quantitative outcomes will be presented.

### 390 | Lessons Learned after Three Decades of Growing and Sustaining Pediatric Psychosocial Oncology Programs

*Amanda Thompson<sup>1</sup>, Tammi Young-Saleme<sup>2</sup>*

<sup>1</sup>Children's National Health System, Washington DC, USA;

<sup>2</sup>Nationwide Children's Hospital, Columbus, USA

**Background/rationale or Objectives/purpose:** The growth and sustainability of psychosocial programs within pediatric oncology care is an important yet daunting endeavor. Many clinicians evolve into administrative leadership roles with limited training, support, or access to resources and therefore may struggle to find their footing.

**Methodology or Methods:** Combining over three decades of experience leading, growing, and sustaining multidisciplinary psychosocial programs within large pediatric oncology programs, presenters will highlight 'lessons learned' in an effort to guide colleagues involved in program development. Lessons described will include key directives related to business (e.g., 'Learn to write a business plan'), philanthropy (e.g., 'Build a strong partnership with your organization's foundation'), marketing (e.g., 'Consider ethical implications of marketing goals and requests') and relationships (e.g., 'Identify mentors within the field and within disciplines'), among others (e.g., 'Document metrics, outcomes, and value added').

**Impact on practice or Results:** Program growth and sustainability efforts are vital to the support of a robust multidisciplinary team and ensure that patients and families receive the highest quality psychosocial care from the time of diagnosis, throughout treatment, and into survivorship or end-of-life.

**Discussion or Conclusions:** The challenges involved in growing and sustaining psychosocial programs are numerous, yet several can be addressed by building leadership abilities, business skills, and key relationships with partners and stakeholders at your institution and within your professional and local communities. Additional resources will be provided to extend each of the highlighted 'lessons learned', and discus-

sion will focus on barriers to and successes in program development, with attention paid to the heterogeneity of program structure, size, and composition across institutions.

### 388 | Setting up a structured activity programme for hospitalized cancer patients referred to Psycho-oncology service: a Quality Improvement initiative in a low resource setting

*Jayita Deodhar<sup>1</sup>, Savita Goswami<sup>1</sup>, Lekhika Sonkusare<sup>2</sup>*

<sup>1</sup>Tata Memorial Hospital, Mumbai, India; <sup>2</sup>Tata Memorial Hospital, Mumbai, India

**Background/rationale or Objectives/purpose:** Psychosocial programmes for cancer patients should follow evidence-based standards for improving patients' functioning and managing their illness, in hospital and community settings. Inpatients have multiple challenges of coping with cancer treatments, daily activities and mood, for which a structured activity programme can help. The purpose of our study was to implement and improve compliance to a structured activity programme for hospitalized cancer patients referred to Psycho-oncology service, conducted as a Quality Improvement (QI) initiative.

**Methodology or Methods:** We applied the A3 methodology for identifying causes, key drivers and interventions in setting up this structured activity schedule programme. We devised and administered a structured schedule checklist to eligible adult inpatients referred to Psycho-oncology service. We collected data and measured patient compliance rates pre and post intervention.

**Impact on practice or Results:** 233 inpatient medical records over a 9-month period were analysed. 124 were males and the most common diagnosis was gastrointestinal and hematolymphoid cancers. The pre-intervention patient compliance rate was 0–12.5%. The main causes identified were an imprecise activity schedule and unclear process of administration. Key interventions done were devising and implementing a standardized administration protocol. The compliance rate increased to 91% at the end of 6 months.

**Discussion or Conclusions:** Using this QI initiative, the number of hospitalized cancer patients successfully adhering to an activity schedule improved. Sustainability of the programme would be through identified key staff monitoring the devised protocol and staff commitment to this programme. Quality improvement is important in psycho-oncology service enhancement for better patient care.

### 383 | The Relationship between symptom-management self-efficacy' Demoralization and Emotional status in Breast Cancer Patients

*Ya-Chun Chang<sup>1</sup>, Shu-Yuan Liang<sup>2</sup>, In-Fun Li<sup>1</sup>*

<sup>1</sup>MacKay Memorial Hospital, Taipei City, Taiwan; <sup>2</sup>National Taipei University of Nursing and Health Sciences, Taipei City, Taiwan

**Background/rationale or Objectives/purpose:** When receiving a cancer diagnosis and treatment, most people tend to develop emotional disturbances, which will have an adverse impact on the cancer treatment, as well as patients' quality of life.

This research aims to explore the correlation between the symptom management self-efficacy, demoralization, and mental status of inpatients with breast cancer

**Methodology or Methods:** This cross-sectional design was used with a purpose sampling. Data collected with patients' characteristics, symptom management self-efficacy scale, Hospital Anxiety and Depression Scale(HADS) and Demoralization Scale- Mandarin Version(DS-MV).

Data were analyzed by descriptive statistics, one-way ANOVA, and Pearson's correlation.

**Impact on practice or Results:** A total of 95 breast cancer patients undergoing chemotherapy were recruited.

The correlation coefficients of “overall symptom management self-efficacy” ( $r = -.36$ ,  $p < .01$ ), “anxiety”, and “depression” are significantly negative, which means that a better awareness of symptom management self-efficacy in various respects will help alleviate patients’ anxiety and depression. In contrast, the correlation coefficients of “overall demoralization”, “anxiety” ( $r = .25$ ,  $p < .05$ ), and “depression” ( $r = .47$ ,  $p < .001$ ) are significantly positive, meaning that an individual with a higher level of demoralization will be more anxious and depressed.

**Discussion or Conclusions:** Demoralization may be an aura of depression, while self-efficacy can help improve patients’ emotional state. These research results can help medical personnel further recognize the symptom management self-care ability of patients with breast cancer when undergoing chemotherapy and better understand the impact of demoralization on the emotions of patients.

### 381 | Factors influencing depressed or anxious cancer patients’ help-seeking decisions: A Systematic review

*Joanne Shaw<sup>1</sup>, Anastasia Serafimovska<sup>1</sup>, Haryana Dhillon<sup>1,2</sup>, Richard De Abreu Lourenço<sup>3</sup>, Phyllis Butow<sup>1,2</sup>*

<sup>1</sup>Psycho-oncology Cooperative Research Group, School of Psychology, The University of Sydney, Sydney, Australia; <sup>2</sup>Centre for Medical Psychology & Evidence-based Decision-making, School of Psychology, The University of Sydney, Sydney, Australia; <sup>3</sup>Centre for Health Economic Research and Evaluation, University of Technology, Sydney, Australia

#### Background/rationale or Objectives/purpose:

Despite availability of effective treatments for mental disorders many people do not seek treatment. Inadequate treatment produces a cascade of serious consequences. Understanding the interplay between individual, social and structural factors underlying individual decision-making is crucial to increase uptake of psycho-oncology referrals. The aim of this systematic review was to explore factors that influence the help-seeking decisions of adults with cancer and co-morbid anxiety and/or depression.

**Methodology or Methods:** PubMed, MEDLINE, EMBASE, PsycINFO, CINAHL and The Cochrane Library were searched to identify studies reporting help-seeking for cancer-related mental health concerns. Any study reporting primary data published in English between 2000-present was included. Two researchers reviewed articles for eligibility, extracted data and conducted quality appraisals (Prospero CRD42018110741).

**Impact on practice or Results:** Of the 5278 records screened 99 articles met the eligibility criteria for data extraction and quality appraisal. The majority of studies failed to define help-seeking or differentiate between specialist mental health, general supportive care and informal support. Low mental health literacy, concern about being identified as not coping, as well as practical access issues, influenced help-seeking behaviours. Research quality was relatively poor due to the high number (67%) of small qualitative studies or cross-sectional surveys exploring unmet need. Cohort studies explored general supportive care service utilisation.

**Discussion or Conclusions:** To facilitate greater uptake of mental health services among cancer patients there is an urgent need to move beyond studies focused on access barriers and perceived unmet need. Understanding the factors influencing patients’ decisions to engage with mental health treatment is critical.

### 380 | Supportive Care Needs of Cancer Patients in a Community-based Cancer Center in Hong Kong

*Men Heng Marian Wong*

*Hong Kong Cancer Fund, Hong Kong, Hong Kong*

**Background/rationale or Objectives/purpose:** Assessment of perceived supportive care needs and the magnitude of desire for help in dealing

with the unmet needs are key in optimizing cancer care services. This study assessed cancer patients’ needs in a community setting using a need assessment survey.

**Methodology or Methods:** Eighty cancer patients (80% female; mean age: 60) who attended the Hong Kong Cancerlink Centers between October to December 2017 with distress level of 6 or above on the Distress Thermometer were invited to complete the Chinese Supportive Care Needs Survey Short Form-34 (Boyes et al, 2009). Patients were asked to rate their level of needs for each item in the past month on a Likert rating scale of 0 (‘no need’) to 5 (‘high need’). The percentage of people reported with moderate to high needs (i.e. score 3 to 5) for each item were calculated.

**Impact on practice or Results:** The top 5 items which patients reported moderate to high needs were below: fears about the cancer spreading (34%); having one member of hospital staff with whom patients can talk to about all aspects of their condition (33%); uncertainty about the future (31%); anxiety (31%); and being informed about things you can do to help yourself to get well (30%).

**Discussion or Conclusions:** These findings suggested that services targeting cancer patients’ psychological needs and their existential dimension of life are essential in enhancing cancer patient care especially in the community setting. Future research with larger samples will enable us to identify patients’ needs based on patients’ characteristics (e.g. age groups) and illness (e.g. cancer type).

### 329 | Mental Health Should be a Central Component of Care Delivery for Patients with Head and Neck Cancer

*Melissa Henry, Zeev Rosberger, Michael Meaney, Saul Frenkiel, Michael Hier, Anthony Zeitouni, Karen Kost, Alex Mlynarek, Keith Richardson, Black Martin, Chartier Gabrielle, Kieran O'Donnell McGill University, Montreal, Canada*

**Background/rationale or Objectives/purpose:** The objective of this presentation is to review studies identifying mental health as a target meriting further attention in head and neck oncology. The second goal is to present knowledge transfer (KT) studies indicating barriers to address when implementing collaborative care models in this population.

**Methodology or Methods:** Prospective longitudinal study of 223 consecutive adults (71.9% participation) newly diagnosed (

**Impact on practice or Results:** Several of our studies outline how phenotypic and genetic pre-cancer and upon diagnosis mental health indicators predict cancer outcomes such as suicidal ideation (Journal of OHNS,2018,159(5)), major depressive disorder (Psycho-Oncology,2018,27(6)), the sickness behaviour (new data), and disease-free survival (new data). KT studies also highlight the need to strategically address stigma in this population (Psycho-Oncology,2018,27(12)).

**Discussion or Conclusions:** We can no longer simply see HNC quality of life as related to treatment impairments and toxicities and must address mental health comorbidities early-on using a prehabilitation model of collaborative care, with concomitant integration of KT ‘stigma-busting’ strategies.

### 321 | Systematic review of health professionals’ views on the barriers and facilitators to uptake of online psychological therapy programs

*Fiona Davies<sup>1</sup>, Heather Shepherd<sup>1</sup>, Phyllis Butow<sup>1</sup>, Brodie Clark<sup>1</sup>, Lisa Beatty<sup>2</sup>, Joanne Shaw<sup>1</sup>*

<sup>1</sup>The University of Sydney, Sydney, Australia; <sup>2</sup>Flinders University, Adelaide, Australia

**Background/rationale or Objectives/purpose:** Objectives/Purpose

This systematic review provides a synthesis of the reported barriers and facilitators to use of online or computer based psychological therapy programs in routine care, as perceived by health professionals (HPs).

**Methodology or Methods:** Methods

Medline, Embase, Psycinfo, Cinahl, and The Cochrane Library were searched to identify studies reporting HP views of online psychosocial interventions. Studies were included if they reported HP views of any computer/internet based psychological treatment program designed to change psychological symptoms or behaviours associated with a diagnosable mental health condition published in English between January 1986 and July 2018. Two researchers reviewed articles for eligibility, extracted data and conducted quality appraisals. Thematic analysis was used to identify key barriers and facilitators. (PROSPERO 2018 CRD42018100869)

#### Impact on practice or Results: Results

Of the 2311 records screened, 31 articles met the eligibility criteria for data extraction and quality appraisal. Key themes identified included patient factors (e.g., internet access, diagnosis); health professional factors (e.g. knowledge of online therapies, perceived effect of online therapies on experience of work), the therapeutic relationship and outcomes (e.g. relationship is less rich and may affect outcome); therapy factors (e.g. standardisation and evidence base); models of care (e.g. tailoring and therapist involvement); and organisational/system factors (e.g., training, integration into health system).

#### Discussion or Conclusions: Conclusion and Clinical Implications

HP support is essential for successful implementation of online therapy into routine care. Addressing HP concerns related to effective integration of online models of care into existing clinical practice and addressing training needs of HPs is essential for wider dissemination of this model of care.

### 316 | Patients' perspective in the Ghanaian context: Assessing the needs and belief system of prostate/ cervical cancer in Accra- Ghana

*Salisu Anko Abdul-Rahim, Mary-Ann Dadzie*

*National Radiotherapy, Oncology and Nuclear, Accra, Ghana*

**Background/rationale or Objectives/purpose:** To ascertain the opinions and feelings of person's with prostrate/ cervical cancer about their informative, psychological, practical and social needs, their belief system during treatment and to examine relationship among variables studied between the two groups. To utilize the findings to launch qualitative research.

**Methodology or Methods:** The main research will implement survey design with purposive technique, n = 200 made up of 100 prostate and 100 cervical patients at the main radiotherapy and oncology clinic in korle-bu teaching hospital, Accra. Demographics, the Needs Evaluation Questionnaire (Tamburini M et al., 2000) and System Belief Inventory (Jimmie C. Holland, 1998) will be used to assess the variables.

**Impact on practice or Results:** Preliminary results for the pilot study of n = 60, prostate = 30 and cervical = 30

Descriptive statistics of demographics and studied variables

Males and females represent prostate = 50% and cervical = 50% respectively. The needs evaluation on information constitutes 98.3%, psychological 85%, practical 83.3% and social 93.3. For belief system inventory, spiritual constitute 88.3% while support 83.3%.

The two groups turned to need more information, psychological, practical and social needs while undergoing treatment. Further analysis will be used in the main study to enhance the direction of the studied variables.

**Discussion or Conclusions:** The preliminary data shows the needs of cancer patients and the strength of their belief system. However, the researchers are in the process of launching the main research and so contributions are welcome.

### 306 | Identifying and supporting cancer patients who are also parents: a new hospital support service

*Fiona E.J. McDonald<sup>1,2</sup>, Pandora Patterson<sup>1,2</sup>, Jo Phipps-Nelson<sup>3</sup>, Catherine Ludbrook<sup>3</sup>, Fran Hodgson<sup>4</sup>, Lina Versace<sup>5</sup>, Stephanie Konings<sup>1</sup>, Elena Schiena<sup>3</sup>, Cindy Wilson<sup>5</sup>, Sarah Wilson<sup>4</sup>*

<sup>1</sup>CanTeen Australia, Sydney, Australia; <sup>2</sup>The University of Sydney, Sydney, Australia; <sup>3</sup>Peter MacCallum Cancer Centre, Melbourne, Australia; <sup>4</sup>John Hunter Hospital, Newcastle, Australia; <sup>5</sup>Campbelltown & Camden Hospitals, Sydney, Australia

**Background/rationale or Objectives/purpose:** Adult hospitals are traditionally patient-focused, rather than family-focused. While adolescent and young adult children of cancer patients (AYA offspring) have significant psychosocial burdens associated with the cancer, they are often invisible within hospitals with no clear referral pathways to support. Additionally, both parents and offspring report significant concerns around communicating information and discussing the cancer situation within the family.

**Methodology or Methods:** Parent Support Workers (PSWs) were embedded within the social work teams of tertiary hospitals to support patients with AYA offspring. This service aims to assist with specific cancer-related parenting challenges and establish a referral pathway for AYA offspring needing support. A service improvement approach was established, involving monitoring of referrals/sessions, information given to young people, and referrals to CanTeen. A service evaluation seeking feedback from patients and hospital staff is also underway.

**Impact on practice or Results:** Staff described this service as unique, filling a gap, impacting families' lives, reaching patients who wouldn't have access to support, and increasing awareness and confidence of other workers to support families. Parents reported high satisfaction with the service; distress and parenting concerns decreased, and AYA offspring were referred to support. However, site-specific challenges existed around maintaining awareness of the role and referrals to the PSW.

**Discussion or Conclusions:** PSWs provide a unique service that fills a gap, helps other staff members, and results in positive family outcomes. The introduction of the role has increased awareness within hospitals of the additional needs of parents with cancer, and enabled tailored support for these families.

### 298 | How are family-reported outcomes used to benefit patients and families, health care providers, and the health care system? A scoping review

*Jennifer C. Pink<sup>1,2</sup>, Shama Bath<sup>1</sup>, John W. Robinson<sup>1,2</sup>*

<sup>1</sup>University of Calgary, Calgary, Canada; <sup>2</sup>Tom Baker Cancer Centre, Calgary, Canada

**Background/rationale or Objectives/purpose:** Cancer can be thought of as a 'we-disease' that families face together. Patients and family members may report decreased wellbeing, quality of life, and relationship functioning, and serve as vital sources of support for each other throughout adjustment to cancer, its treatment, and survivorship. Although much research has documented the impact of cancer on families, its translation to the implementation of family-reported outcomes has lagged far behind the implementation of patient-reported outcomes. The purpose of this scoping review is to map the current utilization of family-reported outcomes in oncology and to make recommendations for future research in this emergent area.

**Methodology or Methods:** A systematic search of MEDLINE (Ovid); EBM Reviews (includes Cochrane Database of Systematic Reviews); PsycINFO; PubMed; CINAHL; MEDLINE (Ebsco); Web of Science; EMBASE; Social Work Abstracts; SOCIndex with Full Text; Sociological Abstracts; and grey literature identified 577 articles after duplicates were removed. Two reviewers will apply inclusion/exclusion criteria to evaluate them for possible inclusion in the review.

**Impact on practice or Results:** We will produce a narrative review to summarize key issues and themes within the existing literature on family-reported outcomes in oncology. We will also provide a summary of family-reported outcomes in select other medical specialties (e.g., dermatology) which can inform cancer care.



**Discussion or Conclusions:** This scoping review will provide an overview of the emergent literature on family-reported outcomes in oncology. It will provide recommendations for future research to support further development of family-reported outcome measures and implementation of family-reported outcomes in research and practice to promote optimal cancer care.

### 273 | How Consultation-Liaison Psychiatric Service changed the Cancer Care

*Jinjiang Li, Yening Zhang, Lili Tang*

Beijing Cancer Hospital, Beijing, China

**Background/rationale or Objectives/purpose:** In China, few Consultation-Liaison Psychiatric Service (CLPS) has been carried out and reported in cancer care. This article mainly analyzed the changes in the psychiatric consultation of cancer inpatients before and after the CLPS in Beijing Cancer Hospital.

**Methodology or Methods:** Since 2016, 5 attending psychiatrists were allocated to 12 wards (C-L wards) to carry out symptoms screening, psychiatric treatment and regular patient education and basic psychosocial training for oncology clinicians. While in the Consultation Only wards (C-O wards), the psychiatrist did consultation only if they were invited to. This study compared the density of psychiatric consultations in the two kinds of ward in 2015 and 2017, 2018 by Chi-square tests.

**Impact on practice or Results:** The density of psychiatric consultations in the C-L wards and the C-O wards in 2017 were higher than that in 2015 ( $P < 0.001$  vs.  $P < 0.01$ ). However, only the change in C-L wards appeared in 2018 ( $P < 0.001$ ). In 2017 & 2018, the increase in the density of psychiatric consultations in the C-L wards are more pronounced than in the C-O wards (all  $P < 0.001$ ). The five most common causes of psychiatric consultations are sleep disorders, chronic pain, anxiety and depression, delirium and nausea and vomiting.

**Discussion or Conclusions:** The consultation liaison psychiatric health service model has improved the psychiatric consultation rate of cancer hospitals and found more psychological disorders or issues that might otherwise be overlooked, improved the recognition rate of mental disorders or psychological problems in cancer care.

### 255 | Development and Implementation of Artificial Intelligence Methods to Extract Cancer-Related Psychological Symptoms from Electronic Health Records

*Miryam Yusuf<sup>1,2</sup>, Alex Forsyth<sup>1</sup>, Isabel Chien<sup>1</sup>, James Tulskey<sup>1,2</sup>, Charlotta Lindvall<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** OBJECTIVES/PURPOSE. As many as 50% of cancer patients experience substantial psychological distress associated with diagnosis and treatment, with 20% meeting criteria for a formal diagnosis. Unfortunately, psychological symptoms are frequently not documented in electronic health records, with implications for diagnostic clarity and treatment. This study describes the creation of natural language processing methods capable of extracting patient-reported symptoms from free-text electronic health records.

**Methodology or Methods:** Methods. The dataset included 103,564 sentences obtained from electronic clinical notes of 2,695 breast cancer patients receiving chemotherapy at two academic cancer centers between May 1996 and May 2015. We manually annotated 10,000 sentences and trained a conditional random field model to predict words indicating an active symptom, absence of a symptom, or no symptom. Final model performance was determined on 20% test data unused in model development or tuning.

**Impact on practice or Results:** Results. Of the top 20 most commonly extracted symptoms from the sample of sentences, the psychological and psychosomatic words included, “fatigue”, “nausea”, “discomfort”, “weakness”,

“appetite”, “palpitations”, and “headache”. However, no terms directly and exclusively indicative of psychological symptoms or distress were documented in the top 20 (e.g., “sad”, “hopeless”, “worried”, “upset”).

**Discussion or Conclusions:** Conclusions. Symptoms extracted in the present sample may be attributed more to cancer treatment, rather than psychological symptoms. Lack of clinician documentation of psychological symptoms may impede access to psychosocial care. Though this initial model requires further optimization to improve performance, advanced model building may generate machine learning methods that may be utilized in academic medical centers, with far-reaching applications.

### 249 | Making Visible the Invisible Challenges of Informal Care-Giving: A Psycho-Social Reconstruction of Cancer Care Narratives of Indian Immigrants in North America

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**Background/rationale or Objectives/purpose:** Previous research has established “care-giving” as a culturally-determined construct, yet little attention has been paid to its referents that guide care-giving attitudes and behaviours, particularly in the globalised, multi-cultural contexts. The present research addresses this gap by systematically re-constructing the unique care-giving experiences of Indian immigrants in North America in order to identify and understand their positioning, and the challenges they encounter in the cancer-care trajectory.

**Methodology or Methods:** Relying on qualitative methods of investigation, the data was collected using semi-structured, in-depth interviews of 10 care-givers (6 Females, 4 Males) over a two-month period in 2018. The data was then analysed using thematic analysis.

**Impact on practice or Results:** The findings reveal three major themes and sub-themes described as under:

- Cultural variations in care-giving: distinguishing “seva” from “providing care”

- Negotiating duality in informal care-giving: uncovering competing attitudes, beliefs, roles, and priorities of care-givers. Sub-themes include:

- a) Being connected v/s Providing connection

- b) Feeling out of control, and

- c) Recognising differences

- Reconsidering palliative care strategies

**Discussion or Conclusions:** Given the rise of culturally pluralistic societies, critically evaluating the provision of culturally-appropriate care tailored to the needs of the individuals and their families becomes imperative. The findings imply that healthcare professionals (e.g. nurses, psychologists) need to acquire a more refined understanding of changing cultural norms and the life context of Indian care-givers, and assist them in negotiating the potential conflicts between traditional values and the demands of care-giving. The findings also emphasise the need to develop culturally-competent palliative care strategies and more focused outreach programs in North America.

### 215 | Sources of Distress in Breast Cancer Patients Based on Age and Stage of Disease

*Addie Hill<sup>1</sup>, Kevin Yoon<sup>2</sup>, Shelly Gupta<sup>2</sup>, Richard Obenchain<sup>1</sup>, Karen Clark<sup>1</sup>, Matthew Loscalzo<sup>1</sup>, Joanne Mortimer<sup>1</sup>*

<sup>1</sup>City of Hope Comprehensive Cancer Center, Duarte, USA; <sup>2</sup>Harbor-UCLA Medical Center, Torrance, USA

**Background/rationale or Objectives/purpose:** Breast cancer patients may have different biopsychosocial concerns depending on age and stage. In a preliminary study of 3,352 patients, patients under age 65 identified finances as more distressful while patients over age 40 identified physical symptoms as more distressful. We explored further about sources of distress based on stage of breast cancer.

**Methodology or Methods:** All patients were surveyed electronically about their biopsychosocial concerns at City of Hope. The staging data was obtained from the Cancer Tumor Registry in 1,579 patients out of 3,352 patients who underwent the biopsychosocial screening from 2009–2017. Then, it was randomly sampled and independently confirmed by chart review.

**Impact on practice or Results:** Regardless of stage, five of the top seven highly distressing problems reported were the same: worry about the future, side effects of treatment, finances, sleeping, and fear of medical procedures. Stage I-III patients also identified feeling anxious or fearful, managing emotions, and fatigue among their top causes of distress. Stage IV patients also identified questions and fear about end of life and pain among their top causes of distress. There were no significant differences in causes of distress between age groups within each cancer stage.

**Discussion or Conclusions:** Biopsychosocial concerns were similar regardless of stage. However, stage IV patients identified end of life issues and pain as more distressful. Analysis by age groups did not find major differences in causes of distress. While it is important to address all biopsychosocial concerns, end of life issues and pain should be weighted more for stage IV breast cancer patients.

## 206 | Global Practices of Psychosocial Assessment of Pediatric Hematopoietic Stem Cell (HSC) Donors: A Call to Optimize Care to a Vulnerable Population

*Jennifer Hoag<sup>1</sup>, Wendy Pelletier<sup>2</sup>, Galen Switzer<sup>3</sup>, Lori Wiener<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** There is increasing data supporting psychosocial risks associated with pediatric HSC donation, yet this remains an understudied area of research. This study was designed to describe current transplant center practices for assessing the psychosocial needs of pediatric donors (<18 years) prior to and following HSC donation.

**Methodology or Methods:** A cross-sectional survey was distributed electronically to directors at all CIBMTR and EBMT centers. Responses were received from 47% of centers.

**Impact on practice or Results:** Most centers (69%) perform a psychosocial screen of HLA-matched donors before donation. Psychosocial screening tends to focus on ability and willingness to assent (93%) and donor psychological functioning (80%). Fewer centers assess for donor experience with medical procedures (53%) and expectation of transplant outcome (33%). A slight majority of centers (57%) use standardized/validated measures in their assessment. Psychologists (76%) and social workers (36%) are most likely to perform the psychosocial interview. Results of the psychosocial assessment are not consistently documented in the medical record (47%). A minority of centers provide follow-up psychosocial care for donors (41%). Few centers have written policies related to donor screening/assessment (30%) or psychosocial care before (14%), during (11%) or following (16%) donation. However, 86% of respondents indicated that they would find guidelines for psychosocial care useful.

**Discussion or Conclusions:** Despite defined need, psychosocial assessment and follow-up of pediatric HSC donors is inconsistently implemented. In order to optimize care of this vulnerable population, standards of practice must be established that identify content that is critical to address in psychosocial screenings and timing of surveillance post-donation.

## 200 | National Dissemination of the Androgen Deprivation Therapy Educational Program

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**Background/rationale or Objectives/purpose:** Androgen deprivation therapy (ADT) is a common treatment for prostate cancer, but ADT has physical, psychological, and sexual adverse effects that reduce patients' quality of life. We developed a facilitated educational program to prepare patients for how to manage these side effects. After establishing the efficacy of the educational program, we aimed to disseminate it at various sites across Canada. We assess here our efforts in that regard.

**Methodology or Methods:** Several cancer centres across Canada were informed of the program. Facilitators at each site were identified and trained. The training model was tested to see if facilitators felt confident to launch the program at their sites. Between 2014 and 2017 the program was targeted to be implemented at six sites. Facilitators were subsequently trained to run the program at nine additional Canadian sites, totaling 14 trained sites by early 2019.

**Impact on practice or Results:** The training model proved effective for facilitators to be able to offer the program at their home site. Follow-up was conducted in 2019 to determine if sites had indeed launched the program and to gauge progress made. Results of the follow-up indicate various barriers and challenges to program implementation. Status reports were obtained for program offerings at each site. A comparison of the total number of sites trained versus sites with fully operational programs will be presented.

**Discussion or Conclusions:** Learnings from the program's dissemination will be discussed, including potential applications of this model to program dissemination for other supportive care and educational programs designed to help patients with cancer.

## 197 | Modifiable factors of adaptation in adolescent and young adult (AYA) cancer patients and survivors: feasibility and preliminary insights from Cognitions and Affect in Cancer Resiliency (CaNCr) Study

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**Background/rationale or Objectives/purpose:** This study is designed to assess feasibility of online research into cognitive and coping mechanisms, and to provide preliminary insights into what modifiable factors play a role in resiliency in AYA cancer populations.

**Methodology or Methods:** AYA cancer patients and survivors, aged 18 - 39 years, are being invited to participate in an online study. Self-reported demographic, medical and health information are being collected. Participants also answer questionnaires about cognitive and coping styles, alexithymia, cancer worry, distress, and experience participating in such research.

**Impact on practice or Results:** To date, 16 AYAs (69% female) aged 22 to 36 (m = 28.4 years) have participated. The age at diagnosis ranged from 10 to 36 (m = 22.1 years). Time since treatment completion ranged from 0 to 20.5 years (m = 6.6 years). Eleven participants (69%) reported cancer or related episodes as the most stressful event in their lives. Brief Symptom Inventory (BSI-18) revealed low presence of distress, ranging from 0 to 41 (m = 11.1). Self-reported health status ranged from 35% to 90%. Nine participants (56%) worried about illness relapse, and 11 (69%) worried about receiving a new cancer diagnosis. The participants reported the length, type, and number of questions to be appropriate. Only 1 participant found the survey burdensome, and none found it distressing.

**Discussion or Conclusions:** Online research in modifiable factors of resilience in AYA cancer populations is feasible. A better understanding

of adaptive processes in AYA cancer patients will help inform clinical care.

Is BSI-18 appropriate measure for cancer populations?

When does worry about relapse become a problem?

## 192 | Trauma- and stressor-related disorders among hematological cancer patients with and without stem cell transplantation: an interview-based study according to updated diagnostic criteria

*Jochen Ernst<sup>1</sup>, Katharina Kuba<sup>1</sup>, Franziska Springer<sup>1</sup>, Philipp Göbel<sup>1</sup>, Anja Mehnert-Theuerkauf<sup>1</sup>, Uwe Platzbecker<sup>2</sup>, Christine Döhring<sup>2</sup>, Georg-Nikolaus Franke<sup>2</sup>, David Beverungen<sup>2</sup>, Karin Claßen<sup>2</sup>, Peter Esser<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Objective: Trauma- and stressor-related disorders pose an important issue for patients with medical conditions, as they have a detrimental impact on the treatment and the outcomes of the underlying disease. Despite increasing research on distress elicited by cancer-related events, few studies investigated patients with stem cell transplantation (SCT) so far. This patient group, however, is confronted with a particularly high number of stressors. Furthermore, relevant results are inconsistent and primarily based on self-report questionnaires and small samples. Moreover, previous research has to be replicated owing to updated diagnostic criteria in the DSM-5.

**Methodology or Methods:** Methods/Design: This cross-sectional study will recruit at total of 600 hematological cancer patients, of which 300 have undergone SCT and 300 have not. All patients will be assessed for trauma- and stressor-related disorders via (i) a structured clinical interview according to updated diagnostic criteria of the DSM (SCID-5) and (ii) validated questionnaires. For group comparisons, we will use large data sets from the German general population.

**Impact on practice or Results:** Results: This study will assess type and extent of psychological distress elicited by the hematological disease and its treatment and thus may contribute to improve therapeutic strategies for this patient group. We will present results on the IPOS congress.

**Discussion or Conclusions:** Discussion and clinical implication: We will discuss the study results on the IPOS congress. The clinical implication of the study is to identify the particular need for psycho-oncological treatment in patient with/without SCT and thus helps to further develop and implement specific psycho-oncological interventions.

## 144 | A Longitudinal Study of Health Status After Hospital Discharge in Gynecological and Breast Cancer Patients Who Have Access to the Internet

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**Background/rationale or Objectives/purpose:** This pilot study was conducted as an initial step of a larger project to examine the effects of an online self-management program for improving the psychosocial adjustment and quality of life (QOL) for patients discharged from hospital following surgery for cancer. The objective of this study was to evaluate the health status of patients with gynecological cancer or breast cancer who have access to the Internet.

**Methodology or Methods:** Longitudinal questionnaire surveys, including measures of health outcome regarding QOL, symptom severity, symptom interference, anxiety, and depression were carried out at 3 intervals: within 2 weeks, 1 month, and 3 months after hospital discharge.

**Impact on practice or Results:** Finally, 29 (valid response rate, 46.8%) patients 3 times returned questionnaires by mail. At the first survey the

average age of patients was 53.7 years (SD = 11.8), 19 (65.5%) of them were undergoing treatment, and only 4 (13.8%) had visited our online self-management program website. At the third survey, the number of patients undergoing treatment had decreased to 15 (51.7%), and those who had visited the online website increased to 10 (34.4%). The average scores of health outcomes were all improved at the second and third surveys compared with the first survey. However, Friedman rank test revealed that it was only symptom interference that showed significant difference ( $p = .002$ ) across 3 intervals.

**Discussion or Conclusions:** The finding of this study suggests that female patients who have undergone surgery for cancer seem to have lingering health problems after hospital discharge; thus, a substantive strategy to facilitate participation in the online self-management program is probably necessary.

## 129 | Genetic testing and ovarian cancer: attitudes and experiences of women impacted by the disease

*Hayley Russell<sup>1</sup>, Annemarie Ferguson<sup>1</sup>, Sue Hegarty<sup>1</sup>, Anvi Le<sup>2</sup>, Deborah Rozco<sup>2</sup>*

<sup>1</sup>Ovarian Cancer Australia, Melbourne, Australia; <sup>2</sup>Health Management Advisors, Melbourne, Australia

**Background/rationale or Objectives/purpose:** To increase understanding of the experiences of women diagnosed with ovarian cancer to improve the quality of consumer services. The information gathered through the survey can be used to bridge information gaps, improve communication and increase awareness of the importance of genetic testing for women with ovarian cancer.

**Methodology or Methods:** Women on the OCA database were invited to complete an online cross-sectional survey with a mixture of question types resulting in both quantitative and qualitative data.

**Impact on practice or Results:** 371 women across Australia responded to the survey. Results have shown a shift in the awareness of genetic factors relating to the development of ovarian and breast cancer, particularly in younger age groups. This has translated to higher uptake for testing across all demographics. Survey results indicate that women are less likely to access genetic counselling and those that do may be less satisfied with the services compared to previous data. The analysis also identified that women in rural and remote areas were less likely to access clinical trials and waited longer for test results and counselling appointments. Qualitative data revealed emotional impacts both positive and negative, information needs and financial concerns.

**Discussion or Conclusions:** The survey results have highlighted areas for future focus by OCA in considering the psychosocial wellbeing of women undergoing the genetic testing process. Further research is needed into the efficacy and outcomes of the genetic counselling process to improve this experience in Australia.

## 119 | Development of a health belief questionnaire for endocrine therapy and investigation of health belief and adherence in premenopausal survivors with breast cancer

*Lei Xu, Baosen Zhou, Aiping Wang*

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**Background/rationale or Objectives/purpose:** To develop Endocrine Therapy Related Health Beliefs Questionnaire (ETRHBQ) which is appropriate for endocrine therapy (ET) breast cancer survivors in the background of Chinese culture. And to investigate the current status of health belief and ET adherence of survivors and discusses the relationship between health belief and adherence

**Methodology or Methods:** Researchers constructed ETRHBQ relying on the literature review and results of a qualitative study based on health belief model as the theoretical foundation. A cross-sectional survey was conducted on 289 ET survivors by means of ETRHBQ to analyze the



data by using face validity, content validity index, Cronbach's  $\alpha$  coefficient, factor analysis, criterion-related validity and so on. Selecting 329 premenopausal survivors who are treated ET for more than half a year randomly, the researcher uses the ETRHBQ, the Morisky Medication Adherence Scale (MMAS-8) to collect data and then applied the SPSS to analyze the data.

**Impact on practice or Results:** The validity and reliability of ETRHBQ are both good. The overall healthy belief level of 329 premenopausal survivors is low. The adherence was moderate, and the average score of MMAS-8 is  $6.34 \pm 1.53$ . The correlation coefficient between health belief scores and adherence scores is  $0.6 (P < 0.01)$ .

**Discussion or Conclusions:** ETRHBQ can be used as an assessment tool in studying the level of the health belief of ET survivors. Evaluation results of the questionnaire can provide reference for the contents of the intervention and follow-up plan. The adherence of premenopausal breast cancer survivors ET in China mainland is poor and the rate goes down as the treatment time.

#### 94 | 'Discussing bad news with cancer patients at home. A communication tool for health care professionals in home care.'

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**Background/rationale or Objectives/purpose:** Health care professionals (HCPs) in home care are increasingly facing clients with cancer. These clients often get bad news at different moments in their trajectory. How should HCPs in home care communicate with their clients about the 'bad news' they received? How to address the needs and emotions of the relatives? And how should HCPs deal with their own emotions in these difficult situations?

**Methodology or Methods:** After a literature review and exploratory discussions with stakeholders in the sector of home care, the Cedric Hèle Institute organized individual and focus group interviews with HCPs in non-residential care.

A previously published brochure 'Communicating bad news in oncology (2014)' by Stand up to Cancer formulated a set of recommendations for HCPs in hospital care. These were now discussed and reviewed. The specific communication needs of HCPs when dealing with these clients at home were listed and grouped.

**Impact on practice or Results:** The individual and focus group interviews led to new insights and additions to the already existing recommendations. Communication advice was written down and grouped into the following categories: my client, the relatives, myself as a home HCP, communication tips and practical information. These were published in the form of a fan booklet.

**Discussion or Conclusions:** With the practical fan booklet providers of home care have a strong, practical communication tool to address bad news issues with their clients with cancer. In addition to this, training modules are provided in which the different items are further explored and communication skills practiced.

#### 78 | Body image as a predictor of psychological distress and quality of life in patients with colorectal cancer after operation

*Lili Song, Ying Pang, Lili Tang*

*Peking University Cancer Hospital, Beijing, China*

**Background/rationale or Objectives/purpose:** Objective: To describe body image problems, including demographic characteristics and treatment correlates and to examine relations among body image, psychological distress and QOL in patients with colorectal cancer (CRC).

**Methodology or Methods:** Methods: A convenience sample of 282 CRC patients after operation participated in an observational,

cross-sectional study using the following self-report measures: Body Image Scale (BIS), Distress thermometer (DT), Hospital Anxiety Depression Scale (HADS) and the Core Quality of Life Questionnaire (QLQ-C30).

**Impact on practice or Results:** Results: Stoma group had significantly poorer body image, psychological distress, anxiety, depression, emotional function (EF), social function (SF), global quality of life (GQL) and financial difficulties than non-stoma group. Body image was positively correlated with psychopathology and symptoms, and negatively correlated with function subscales and GQL. With/without stoma was the most important correlates with body image, distress, anxiety, depression, EF, and SF. Body image significantly predicted the levels of psychological distress, anxiety, depression, and QOL.

**Discussion or Conclusions:** Conclusions: The findings suggest the importance of assessing body image as a predictor for psychopathology and QOL.

#### 71 | Patients Report Outcome (PRO) from the Distress Assessment and Response Tool (DART) Program in Chinese Cancer Patients

*Yening Zhang, Ying Pang, Lili Tang*

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**Background/rationale or Objectives/purpose:** Distress and symptoms screening as the patients report outcome (PRO) has been increasingly recognized for improved whole-patients cancer care in Chinese cancer practice. We carried out a Multi-Centered Cross Sectional Survey to explore PRO of physical, psychological, social wellbeing.

**Methodology or Methods:** 1250 questionnaires were distributed to 5 hospitals in 4 provinces. Assessment instruments included: the Distress Assessment and Response Tool (DART), demographic and medical information. Descriptive, Chi-Square, Logistics Regression, Hierarchical clustering Analysis were used for data analysis.

**Impact on practice or Results:** 1045 valid questionnaires were collected (83.6% valid ratio). Top five symptom burden were: Low wellbeing 39.4%, Lack of Appetite 35.4%, Tiredness 32.9%, Shortness of breath 21.5%, Pain 21.1% (selected). Depression, anxiety, nausea, drowsiness, pain were assembled to be one symptom cluster; Lack appetite, low wellbeing, tiredness, shortness of breath were integrated as the other symptom cluster. Social difficulty (OR range 1.014–1.029, p

**Discussion or Conclusions:** DART provide a systematic screening program for collecting patients' report outcome and referral to specific professionals. Social difficulty has a universal impact on patients' physical and psychological wellbeing and should be accounted into qualified cancer care.

#### 66 | IMPACT OF SCREENING FOR DISTRESS ON PSYCHOSOCIAL ONCOLOGY CARE

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**Background/rationale or Objectives/purpose:** Screening for psychosocial distress is recommended as an integral first step in establishing a Psychosocial Oncology (PSO) service. However, studies on the impact of screening have yielded mixed results.

**Methodology or Methods:** This is a retrospective longitudinal examination of existing distress screening and PSO service databases at the Princess Margaret Cancer Centre (PM), Toronto, Canada. The primary objective is to compare PSO clinical service metrics (reasons for and volume of referrals, patient demographics, discipline seen, numbers of appointments, cancer site and stage) from a 5-year period before (2004–2008) and after (2014–2018) implementation of the Distress Assessment and Response Tool (DART) in all clinics at PM. Secondary

objectives are to examine DART scores as an outcome measure of PSO care, and explore the association of DART screening rates with care outcomes (PSO and palliative care visits, antidepressant and opioid prescriptions, emergency visits and hospitalizations).

**Impact on practice or Results:** Understanding the clinical impacts of implementing a distress screening program will inform centres planning to develop new PSO services (eg Rashid Hospital, Dubai), as well as support institutional investment in sustaining distress screening in established programs (eg PM, Toronto).

**Discussion or Conclusions:** This study is one of only a few reports of clinical service metrics from a well-established PSO program within a dedicated urban cancer centre, and the clinical care impacts of one of the world's largest screening for distress programs. The results will lend support for the growing international mandate to implement routine screening for distress as an accreditation requirement in cancer centres.

## 54 | How support methods for informal caregivers in Denmark and Australia can inform international practice

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**Background/rationale or Objectives/purpose:** A worldwide shift to outpatient and home delivered cancer treatment requires informal caregivers to have substantial support in providing care and making decisions. The provision of healthcare is similar in Denmark and Australia and lessons can be shared internationally. Cultural influences on caregivers' support needs and support systems used are not known. In this study unmet support needs and support methods used by caregivers were explored.

**Methodology or Methods:** A secondary analysis was conducted synthesising findings from two studies conducted in Denmark and Australia. In each study, a qualitative approach using focus groups and phone interviews explored caregivers' experiences and support needs while providing care to someone with cancer in the outpatient setting.

**Impact on practice or Results:** All caregivers (N = 97) required more support from nurses in acknowledging, communicating and responding to caregivers' needs and clearer guidance when finding support. Differences included caregivers in Denmark having immediate telephone access during weekdays to a trained oncology nurse at treatment centers and standardised opportunity to receive service support through the healthcare system. Immediate telephone support was not available to caregivers in Australia and access to services was variable. Caregivers in Denmark had fewer issues in escalating care and seeking information.

**Discussion or Conclusions:** Greater support from healthcare services is needed to meet the needs of caregivers. Differences in healthcare services highlight where practices can be translated internationally among similar cultures. Through more structured services such as prioritised telephone support or innovative technology modalities, it may be possible to provide direct support to caregivers in the outpatient setting.

## 42 | Diagnostic accuracy of clinical assessment of emotions in patients with cancer

*Joost Dekker*

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**Background/rationale or Objectives/purpose:** Previous research has suggested that clinical assessment of emotions in patients with cancer

is suboptimal. However, it is a possibility that well-trained and experienced doctors and nurses do recognize emotions, but that they do not evaluate all emotions as necessitating professional mental health care. This implies that the sensitivity of clinical assessment should be tested against the need for professional mental health care as reference standard, instead of emotional distress. We hypothesized that the observed sensitivity of clinical assessment of emotions would be higher when tested against need for professional mental health care as reference standard, compared to emotional distress as reference standard.

**Methodology or Methods:** A consecutive series of patients was recruited at a department of medical oncology. The clinical assessment of emotions by medical oncologists and nurses was derived from the patient file. Emotional distress and need for professional mental health care was assessed using the Distress Thermometer and Problem List. Clinical assessment of emotions was compared to 'emotional distress' and to 'need for professional mental health care' as reference standard.

**Impact on practice or Results:** Clinical assessment resulted in notes on emotions in 42.2% of the patient files (N = 185), with 36.2% of patients experiencing emotional distress and 10.8% expressing a need for professional mental health care. As expected, the sensitivity of clinical assessment of emotions was higher with 'need for professional mental health care' as reference standard, compared to 'emotional distress' as reference standard (P(P = 0.63).

**Discussion or Conclusions:** Clinical assessment of emotions in patients with cancer may be more accurate than previously concluded.

## 36 | Study of the effect of 6-minute walk test in cancer surgery wards on the junior nurses' caring ability

*Hui Yang*

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**Background/rationale or Objectives/purpose:** The overall status quo of junior nurses' caring ability in China is a little lower than abroad, so it is necessary to strengthen cultivation of junior nurses' caring ability. And the 6-minute walk test need love and patience to be finished. To investigate and analyze the effect of 6-min walk test (6MWT) in cancer surgery wards on the junior nurses' caring ability.

**Methodology or Methods:** Evaluate 32 junior nurses' caring ability with the Nkongho Caring Ability Inventory (CAI) before and after implement the 6-minute walk test to the patients after cancer surgery.

**Impact on practice or Results:** The junior nurses' caring ability had significantly developed on total, cognition dimension, courage dimension and patience dimension after all measures considered (p < 0.05).

**Discussion or Conclusions:** The 6-minute walk test in cancer surgery wards has a positive effect on the junior nurses' caring ability, not only to help build great relationships between nurses and patients but also to enhance the junior nurses' understanding of the meaning of care. Junior nurses should practice 6-minute walk test for patients after cancer surgery to improve their caring ability.

## 20 | Effect of multigene testing for breast and ovarian cancer risk on psychosocial problems in women attending French, German and Spanish genetics clinics: A prospective study

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**Background/rationale or Objectives/purpose:** Advances in multigene panel testing for cancer susceptibility has increased the complexity of counselling. The effect of the genetic test result on specific problems in women undergoing testing for breast or ovarian cancer risk was assessed in French, German, and Spanish clinics.

**Methodology or Methods:** Among 752 counselees consecutively approached, 646 (86%) were assessed after the initial genetic consultation (T1), including 510 (68%) affected with breast cancer, of which 460 (61%) were assessed again after receiving the test result (T2), using questionnaires addressing genetic-specific psychosocial problems (PAHC-six scales).

**Impact on practice or Results:** Seventy-nine (17.2%), 19 (4.1%), 259 (56.3%), 44 (9.6%), 59 (12.8%) women received a BRCA1/2, another high/moderate-risk pathogenic variant, non-informative, true negative, or variant of uncertain significance result (VUS), respectively. Overall problems related to the PAHC hereditary predisposition scale (e.g. coping about the test result) decreased from T1 to T2 ( $p < 0.001$ ). The importance of change was significantly different across test result groups for the hereditary predisposition ( $p < 0.01$ ) and familial/social issues (e.g. risk communication) ( $p < 0.01$ ) PAHC scales. On hierarchical regression analyses, difficulties related to hereditary predisposition and familial/social issues were affected by the test result but not those related to other PAHC scales (e.g. emotions).

**Discussion or Conclusions:** In women tested for breast or ovarian cancer genetic risk, psychosocial problems related to cancer genetic testing were mostly unaffected by the test result. Interestingly, counselees who were communicated a pathogenic variant or true negative test result worried more about familial and social issues than those with an uninformative or VUS result.

## Q. PSYCHOSOCIAL INTERVENTIONS

### 746 | Stress Control or Posttraumatic Growth facilitation to diminish Distress in Cancer Survivors? A Randomized Control Trial.

*Cristian Ochoa Arnedo<sup>1,2</sup>, Anna Casellas-Grau<sup>1</sup>, Maria Lleras De Frutos<sup>1</sup>, Jaume Vives<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** Posttraumatic stress symptoms (PTSS) and posttraumatic growth (PTG) are two common responses in cancer patients. Different therapies have targeted stress-growth processes to improve psychological adjustment to cancer, in particular, cognitive behavioral stress management (CBSM) and positive psychotherapy in cancer (PPC). The paradoxical coexistence of stress and growth in cancer patients has questioned the authenticity of PTG and its role in predicting reduced PTSS.

**Objectives:** To compare the effectiveness of CBSM and PPC in reducing stress and promoting PTG in cancer survivors and to analyze the authenticity of PTG and its role in predicting decreased PTSS.

**Methodology or Methods:** Methods: Patients ( $n = 140$ ) were allocated to the PPC ( $n = 67$ ) or CBSM group ( $n = 73$ ). Their PTSS, 9 distress, and PTG were assessed pre- and post-intervention, and at 3- and 12-month follow-ups. The authenticity of PTG facilitation was tested using two interpersonal indicators: corroborated PTG and vicarious PTG in the significant others of participants. Analyses were performed to explore the role of PTG in predicting decreased PTSS.

**Impact on practice or Results:** PPC was more effective in decreasing PTSS and distress over time than CBSM. Neither PPC nor CBSM significantly increased PTG at follow-up. The corroboration of PTG facilitation

and its role in predicting reduced PTSS were observed only in the PPC group.

**Discussion or Conclusions:** PPC is more effective in reducing PTSS and distress in cancer survivors than CBSM. Therapies promoting PTG facilitate the decrease in PTSS, probably due to PTG helping to assimilate and accommodate the experience of having cancer after cancer treatment completion.

### 736 | A Systematic Review of the Current Interventions Available to Support Children Living with Parental Cancer

*Elise Alexander, Moira O'Connor, Clare Rees, Georgia Halkett  
Curtin University, Perth, Australia*

**Background/rationale or Objectives/purpose:** Children living with parental cancer are vulnerable to distress and developmental disruption. However, much of the research regarding intervention efficacy focuses on parents' perspectives. This review aims to identify current interventions available to support patients' children and summarise how effective these are based on children's reports.

**Methodology or Methods:** Between 25 May 2015 and 6 August 2018, a broad search strategy was used to identify relevant references. Seven databases were searched, and grey literature was also vetted. This review was informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and Cochrane guidelines. A quality rating tool developed by Keim-Malpass and colleagues was used to appraise studies.

**Impact on practice or Results:** Eight studies evaluating six interventions were retained. Research designs and interventions were heterogeneous, and study quality was low. A limited number of significant results were reported by studies. These evidenced improvement for symptoms of Post Traumatic Stress Disorder, emotional regulation, and depression. However, overall current interventions are not yet effective at supporting patients' children.

**Discussion or Conclusions:** While findings are encouraging, current interventions are not yet effective at adequately supporting patients' children and there is a need for more tailored and targeted intervention. A theoretical model conceptualising the impact of parental cancer may assist this.

Findings will assist future intervention research by promoting standardised levels of care among cancer patients' children, that is empirically supported, effective, and meets principles of non-maleficence.

### 726 | PSYCHOSOCIAL INTERVENTION OF THE PSYCHO-ONCOLOGY SERVICE, NATIONAL INSTITUTE OF CANCER OF CHILE (INC): A COMMUNITY APPROACH

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**Background/rationale or Objectives/purpose:** In Chile, economic resources allocated to Mental Health (MH) are scarce (2.4% of the total expenditure allocated to health), affecting access to treatments in public healthcare system. The resources are distributed according to Explicit Health Guarantees or GES to public territorial programs, with specific and limited MH benefits, which do not include oncological patients. This means less access to treatments in MH for these patients, forcing them to outsource MH referrals from oncology clinicians.

**Methodology or Methods:** To describe community-based psychosocial intervention model in INC Chile through a flowchart of service activities.

**Impact on practice or Results:** Networking seeks coordination with MH community centers to promote continuity of care for cancer patients, especially in the survivorship period. Within this, the Psycho-oncology Service implements a systematic follow-up of patients who are admitted to psychosocial programs in their home community.



**Discussion or Conclusions:** The limited resources that finance health in Chile are a national problem, so community-based networking and psychosocial intervention is a feasible strategy, facilitating access to appropriate and timely MH treatment and survivorship care of vulnerable people due to the effects of the oncological disease, considering physical and psychological consequences, as well as social integration and rehabilitation of survivors.

Future challenges:

- Neighbourhood, community-based networking counseling with a psychosocial approach, including training to primary health clinicians in psycho-oncology, and the community-based networking approach developed by INC.
- A psychosocial survivorship care team integrated on INC Chile.
- Involve patient participation and their families, as well as patients' advocates.
- Incidence in decision making public policies in comprehensive cancer care.

### 723 | Multimodal group-based prehabilitation in gynecological cancer: a randomized controlled trial protocol

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**Background/rationale or Objectives/purpose:** Women diagnosed with a gynecological cancer face physical and mental health challenges. Providing support prior to receiving treatment (prehabilitation) has shown promise in reducing treatment related adverse effects. Interventions to date have yet to explore group-based models that include a comprehensive psychosocial component. This study examines the impact of a multimodal (exercise, nutrition, and psychosocial counselling) group-based prehabilitation intervention aimed at improving post treatment physical and mental health.

**Methodology or Methods:** A prospective, randomized controlled trial will be conducted at Centre Hospitalier de l'Université de Montréal. All patients diagnosed with gynecological cancer who received medical clearance for exercise will be invited to participate in the study. Participants will be randomized to one of the two groups: 1) exercise and nutrition, 2) exercise, nutrition and psychosocial counselling. All components will be supervised, facilitated, and offered in a group setting over 8 weeks: aerobic and resistance exercises (3 sessions/week), nutrition advice (2 sessions-week1&4) and psychosocial counselling (8 sessions-1/week) focusing on enhancing social support, coping, resilience, and motivation. Outcomes measured include functional capacity (six-minute walk test), fatigue, pain, health-related quality of life, anxiety and depressive symptoms.

**Impact on practice or Results:** If feasible and effective, group-based prehabilitation programming may address the barrier of lack of resources within the hospital setting.

**Discussion or Conclusions:** By increasing social support and providing comprehensive psychosocial counselling that goes beyond cancer related stress reduction, we expect the three modalities prehabilitation group to show 1) greater adherence, 2) greater impacts on overall mental health, and 3) greater improvement in functional capacity in comparison with the other group.

### 717 | Pilot Randomized Controlled Trial a Couple-Based Mind-Body Intervention for Patients with Metastatic Lung Cancer and their Partners

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**Background/rationale or Objectives/purpose:** Given the incurable nature, short survival and high symptom burden of metastatic lung cancer, patients and their partners are at risk of experiencing psychological and existential/spiritual distress. To address these concerns, we developed a dyadic intervention integrating meditation training with emotional disclosure exercises.

**Methodology or Methods:** Dyads completed baseline self-report measures and were randomized to a couple-based mind-body (CBMB), a supportive-expressive (SE), or a waitlist control (WLC) group. Couples in the CBMB and ES groups attended 4 weekly, 60 min therapist-led sessions that were delivered via FaceTime. The CBMB program focused on cultivating mindfulness, compassion, gratitude and purpose. All groups were reassessed, 1 month and 3 months after baseline.

**Impact on practice or Results:** We randomized 75 dyads (63% consent rate) of which 79% completed the T2 and 65% completed the T3 assessments. Attrition was due to patients' death (44%) and active (20%) and passive (36%) withdrawal. Patients (51% female; mean age = 64 years) and partners' (52% female; mean age = 64 years) attended a mean of 3.12 sessions (SD = 1.4). Dyads in the CBMB group indicated greater benefit ( $P < .003$ ) and usefulness ( $P < .05$ ) of the sessions compared to those in the SE group. Regardless of group, 60% of couples would have preferred in-person delivery and 95% of patients but only 33% of partners stated that a dyadic intervention is their preference.

**Discussion or Conclusions:** It seems to be feasible, acceptable and possibly efficacious to deliver dyadic interventions via FaceTime to couples coping with metastatic lung cancer. Although both members of the dyad reported benefit, dyadic delivery appears to be less desirable for partners.

### 705 | "Tile Tales" - An Innovative Creative Arts Program for Patients, Families and Staff on an Inpatient Tertiary Palliative Care Unit

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**Background/rationale or Objectives/purpose:** The creative arts offer a complementary approach to traditional psychosocial interventions, when words alone may not be enough. The purpose of this presentation is to describe the development and evaluation of a creative arts program, entitled "Tile Tales," on a 20-bed tertiary palliative care unit.

**Methodology or Methods:** The "Tile Tales" program encourages the exploration of emotions, values and beliefs through the creation of a visual expression on a ceramic tile, with an accompanying story, poem or sentence. A three-phase evaluation design, based on Stake's formative responsive evaluation framework, was used to evaluate the program: (1) thematic analysis of images and stories ( $n = 85$ ), (2) participant surveys ( $n = 21$ ), and (3) general public surveys ( $n = 15$ ).

**Impact on practice or Results:** Since the program's inception in 2009, over 85 tiles are currently on public display. This program provides participants with an opportunity to create meaningful connections by sharing their personal journeys with other patients, families, staff and the general public through their artwork.

**Discussion or Conclusions:** Six themes emerged from the artwork: spirituality, relationships, journey, story, symbolism, paradox. On the participant survey, the three highest impact scores (scale 1–5) were raising spirits (M 4.9), expression of feelings (M 4.6) and working through grief (M 4.6). For many participants, sharing their artwork was as meaningful as the creation of the piece, itself. The public gallery offers a lasting legacy for others to appreciate, providing moments of joy, hope, inspiration and gratitude, as reported in public surveys. These findings will assist with improving program delivery and future planning of creative arts in palliative care.

### 695 | Exploration and evaluation of a Supportive Group Therapy for Men with Gastrointestinal Cancers: A Mixed-Methods study

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**Background/rationale or Objectives/purpose:** Objectives/purpose: Gastrointestinal (GI) cancer patients often suffer high distress and social isolation. Support groups mitigate illness related stigma and distress; however, men in particular are averse to joining. This three-pronged study sought to explore: i) group uptake and reasons for joining ii) the longitudinal impact of group experience on anxiety/distress/coping/Quality of Life(QoL) at 3 and 6 months from baseline; iii) understand men's experiences of the group over time..

**Methodology or Methods:** Methods: A mixed-method approach was used. Quantitative measures were used to assess distress, and QoL at baseline and at 3 and 6 months respectively. A qualitative study utilizing open-ended, semi-structured interviews and thematic analysis was used to explore group uptake, lived experiences of attending group over time.

**Impact on practice or Results:** Results: Participants included 35 male GI cancer patients at baseline, 23 at 3-months and 15 at 6 months follow up; aged 28–72, at varying disease stage (I – IV) and treatment severity. Themes for Group uptake included: endorsement, composition, attitudes and for enrollment: learning new coping, and affiliation with akin peers. Men's accounts relevant to perceived impact of group experience pointed to decreased psychosocial burden of cancer through mutual support, emotional expression and coping adaptation. Quantitative findings related to distress and coping are being currently analysed.

**Discussion or Conclusions:** Conclusions and Implications: Men-only cancer groups with an emotional supportive focus do have an appeal among GI male cancer patients. Findings bear clinical relevance to designing GI male-centered group support therapies endorsing emotional, existential, coping, and informational support for GI male cancer population.

### 673 | Living Well in the Here-and-Now: Acceptance and Commitment Therapy (ACT) Group for Cancer Patients and Caregivers

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**Background/rationale or Objectives/purpose:** Background/Rationale: Acceptance and Commitment Therapy (ACT) is a mindfulness-based, "third wave" cognitive-behavioural intervention designed to increase psychological flexibility. Preliminary research and clinical experience in psychosocial oncology indicate that ACT is a useful therapeutic approach for working with cancer patients to help improve psychological health, wellbeing, and quality of life.

**Methodology or Methods:** Methodology: This poster focuses on the development of an ACT-based, structured psychoeducational/process group intervention for cancer patients and caregivers to help them live meaningful, rich lives. The poster outlines the structure and format of both an introductory ACT group (ACT I) for patients new to the approach, as well as an advanced ACT group (ACT II) for those who had previously completed the introductory group. Process-outcome data (CompACT), which was therapeutically integrated into the group content, will be presented. Client satisfaction data collected upon completion of each group, as well as qualitative narrative feedback, will also be discussed.

**Impact on practice or Results:** Impact on Practice: Process-outcome data indicate statistically significant ( $p < .01$ ) and clinically significant

(Cohen's  $d = 1.73$ , Cohen's  $d = 1.3$ ) overall changes in the psychological flexibility of group participants from pre to post treatment for ACT I and ACT II groups respectively. CompACT subscale and overall averages will be presented. Group members from both groups indicated significantly above average satisfaction with the interventions and made statements such as "this group was life-changing."

**Discussion or Conclusions:** Discussion: Directions for future ACT group development for cancer patients and caregivers will be explored. Implications for future research will be presented.

### 642 | Psychological Intervention Plus Chemoradiotherapy Versus Chemoradiotherapy Alone in Locoregional Advanced Nasopharyngeal Carcinoma: A Comparative Study

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**Background/rationale or Objectives/purpose:** The effect of psychological intervention combined with chemoradiotherapy in locoregionally advanced nasopharyngeal carcinoma (NPC) is unclear. This study aimed to compare the efficacy and toxicity of psychological intervention plus chemoradiotherapy with chemoradiotherapy alone in locoregional advanced NPC.

**Methodology or Methods:** From March 2018 to January 2019, 200 patients with stage III-IVB NPC received psychological intervention plus chemoradiotherapy (group A,  $n = 100$ ) or chemoradiotherapy alone (group B,  $n = 100$ ). Intensity-modulated radiation therapy (IMRT) and concurrent chemotherapy were administered to all patients. In group A, patients were administered psychological intervention including psychotherapy and cognitive therapy, concurrent with chemoradiotherapy. The anxiety of patients in both groups was evaluated before and one week after treatment with the Self-rating Anxiety Scale (SAS). The treatment response and acute toxicity were evaluated 3 months after the end of treatment.

**Impact on practice or Results:** The SAS score was significantly reduced after treatment ( $36.2 \pm 5.2$  vs.  $27.6 \pm 4.6$ ,  $P$

**Discussion or Conclusions:** Addition of psychological intervention to chemoradiotherapy is associated with significantly improved treatment response, reduced acute toxicity and anxiety relief in patients with locoregional advanced nasopharyngeal carcinoma. Further follow-up is needed.

### 634 | Construction and face validation of a Cancer Coping Questionnaire (CAN COPE)

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**Background/rationale or Objectives/purpose:** The word 'Cancer' in India is associated with death, taboo, stigma and coping with a cancer diagnosis is an essential skill that would help patients in accepting the illness and its outcomes. The aim of the study is to develop an effective tool to assess coping mechanisms employed by Indian cancer patients.

**Methodology or Methods:** The questionnaire construction (in English) included initial pooling of items from prior coping questionnaires, literature, expert views, interviews with patient-carer dyads, and cancer survivors. The expert panel ( $n = 8$ ) consisted of oncologists, psycho-oncologists, psychologists, cancer survivor, and patients-carers. Four rounds of Delphi and three field testings were done establishing face validity and content validity for the questionnaire.

**Impact on practice or Results:** Initial pooling consisted of 155 items and the eight-member panel reviewed them resulting in 87 items. Second round of Delphi resulted in 60 items and the third round resulted

in 36 items. Overlapping, inappropriate and culturally not acceptable items were removed. In the fourth round of Delphi, a '5 point Likert scale response was developed including the expert panel suggestions. The 36 items were field tested: First test: 36 items – 30 retained; second test: 30 items – 33 outcome; thirds test: 33 items – 29 finalized.

**Discussion or Conclusions:** 29 items were consolidated as a tool for assessing coping mechanisms among Indian cancer patients. Research implication includes establishing reliability and validity along with response scoring in order to attain statistical significance. Clinical implication translating the tool into regional languages would ensure wider usage and applicability of the tool in day-to-day clinical practice.

### **617 | Acceptability and perceived barriers for the implementation of Managing Cancer and Living Meaningfully (CALM) in Santiago de Chile: experience of training in a Chilean cohort of health professionals**

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**Background/rationale or Objectives/purpose:** Palliative care (PC) for advanced cancer is mandated by law in Chile, but formal training in PC is scarce in this setting. We evaluated the perceived acceptability of training and barriers to implementation in Chile of Managing Cancer and Living Meaningfully (CALM).

**Methodology or Methods:** We recruited psychosocial oncology clinicians working in oncology/PC in Santiago to participate in CALM training, which consisted of 4 monthly 3-hour sessions. Focus groups were subsequently conducted to explore the experience of CALM training and the perceived barriers to the implementation of CALM in their settings. Thematic analysis was performed, and Proctor's et al. model of health implementation outcomes was used to group categories.

**Impact on practice or Results:** Four training sessions were delivered between May-August 2018 to 24 health professionals from 9 different centers. There was consensus that training was a positive professional experience and that CALM is a culturally sensitive intervention that can be adapted to diverse populations. The CALM model and framework were perceived as relevant to inform practice of a variety of professionals. Results from quantitative measures showed high acceptability. Main barriers to implementation were language (English), institutional bureaucracy, especially regarding research, and unwillingness of PC units and their practitioners to participate in CALM training.

**Discussion or Conclusions:** CALM is a useful and relevant framework to train health professionals working in oncology/PC. Translation of evidence and training material is key to implementation. Further research and organizational studies should assess PC practitioners' beliefs and willingness/resistance to adopt other evidence-based supportive care interventions.

### **614 | Is Managing Cancer and Living Meaningfully (CALM) Therapy Needed in China?**

*Ying Pang, Yening Zhang, Yuhe Zhou, Lily Tang*

*Department of Psycho-oncology, Peking University Cancer Hospital, Beijing, China*

**Background/rationale or Objectives/purpose:** CALM is a brief evidence-based psychotherapy designed to decrease distress and increase well-being in patients with advanced cancer. While research has demonstrated the effectiveness of CALM in other cultural settings, its benefit in Chinese patients has not been established.

**Methodology or Methods:** We are conducting an intervention-only pilot study testing the effectiveness of CALM in 300 Chinese patients with advanced cancer. Measures of depression (PHQ-9), anxiety (GAD-7), death anxiety (DADDS), quality of life (QUAL-EC), and spiritual

well-being (FACIT-sp) are administered at baseline and prior to the delivery of the intervention and at 3 and 6 month follow-up. We report here baseline data from this study, for which depression and death anxiety are the primary outcomes.

**Impact on practice or Results:** To date, 86 patients with stage IV cancer completed baseline measures. Preliminary data analysis showed that 37% of these patients report clinically significant symptoms of depression and 20% such symptoms of anxiety. Pain (57%) and fatigue (55%) were the most common reported physical symptoms. Regression analysis showed that higher death anxiety ( $B = 0.255$ ,  $p = 0.016$ ), less preparation for end of life ( $B = 0.236$ ,  $p = 0.017$ ) and lower sense of meaning and peace ( $B = -0.363$ ,  $p$

**Discussion or Conclusions:** Chinese patients with advanced cancer report high levels of psychological distress that suggest the need for an intervention such as CALM. Research is needed to determine the effectiveness of CALM therapy in the Chinese cultural setting.

### **609 | Applying Managing Cancer and Living Meaningfully therapy in Italy: preliminary results**

*Rosangela Caruso, Maria Giulia Nanni, Luigi Zerbinati, Eleonora Berretti, Adriano Tusciano, Barbara Ronchi, Silvia Costa, Claudia Puggioni, Elisa Tiberto, Martino Belvederi Murro*  
*Institute of Psychiatry, Department of Biomedical and Specialty Surgical Sciences, University of Ferrara, Ferrara, Italy*

**Background/rationale or Objectives/purpose:** Patients with advanced cancer suffer from psychological distress and impaired quality of life that may be ameliorated by psychotherapeutic treatment. For this reason, we are conducting a randomized controlled trial (RCT) to test the effectiveness of the Managing Cancer and Living Meaningfully (CALM) intervention in the Italian setting.

**Methodology or Methods:** The study is a single-blinded phase III (RCT) comparing CALM to nonspecific supportive intervention (SPI). The coordinating site is the Program on Psycho-oncology and Psychiatry, University of Ferrara and the Integrated Department of Mental Health, S. Anna University Hospital, in Ferrara, Italy. Eligibility criteria include:  $\geq 18$  years of age; Italian fluency; no cognitive deficit; and diagnosis of advanced or metastatic cancer. The Italian adaptation of CALM includes 12 sessions (instead of the original 6), delivered over 6 months and covers 4 domains: i) symptom management and communication with health care providers; ii) changes in self and relations with close others; iii) sense of meaning and purpose; and iv) the future and mortality.

**Impact on practice or Results:** The primary outcome is depression and the primary endpoint is 6 months. Secondary outcomes include generalized anxiety, distress about dying and death, demoralization, spiritual well-being, posttraumatic growth, and quality of life.

**Discussion or Conclusions:** This trial is being conducted to determine the effectiveness and benefit of CALM in an Italian cancer setting and its cross-national relevance. If shown to be effective, it has the potential to be disseminated as a new approach to relieve distress and promote psychological well-being in patients with advanced cancer throughout Italy and beyond.

### **595 | Language and stars: an analysis of linguistic styles, linguistic synchrony and patient's satisfaction in communication exchanges between oncologists and users in an Italian medical online forum**

*Laura Vergani<sup>1,2</sup>, Dario Monzani<sup>1,2</sup>, Ketti Mazzocco<sup>1,2</sup>, Gabriella Pravettoni<sup>2,1</sup>*

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**Background/rationale or Objectives/purpose:** An effective patient-oncologist communication is related to positive outcomes. Some studies highlighted the importance of linguistic style in communication, and the influence of linguistic synchrony within a dyad on its stability and cohesion. Nowadays, doctor-patient communication is shifting from traditional face-to-face encounter to online environment. Our aim is to evaluate differences, similarities, and synchrony in linguistic style between patients and doctors interacting on a public-accessible medical web forum, and how these aspects could influence users' satisfaction for consultation.

**Methodology or Methods:** User-oncologist consultations (8,154 messages, 1,178 consultations with 12 oncologists) were analysed with LIWC2015. We evaluated similarity through Language Style Matching (LSM), at conversational and turn-by-turn level, and satisfaction (users' star rating of consultation).

**Impact on practice or Results:** The computerized analysis of word use of the patients and oncologists revealed different linguistic styles and several patterns associated with the patients' ratings of the physicians. Higher ratings were associated with physicians talking about everyday activities. Lower ratings occurred in interactions where oncologists used high rates of positive emotion words and words reflecting a judgmental attitude. Measures of LSM revealed high similarity that increases linearly over time within each consultation. Higher similarity in number of words per sentence predicts lower ratings; higher similarity in words expressing certainty and exclusion predicts higher ratings.

**Discussion or Conclusions:** Linguistic synchrony could be correlated with user's satisfaction for the consultation. Open questions are: which individual differences (e.g., empathy) may lead to higher similarity? Are these results replicable in face-to-face interactions? How synchrony and effective communication may be enhanced in cancer care?

### 589 | COMETE: an innovative multi-modal program for pediatric brain tumor survivors and their family

*Lucille Karsenti<sup>1,2</sup>, Clémentine Lopez<sup>2,1</sup>, Camille Pouchepadass<sup>2</sup>, Audrey Longaud<sup>2</sup>, Carine Da-Fonseca<sup>2</sup>, Cécile Flabault<sup>2,1</sup>*

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**Background/rationale or Objectives/purpose:** Pediatric brain tumor survivors face treatment-induced sequelae of all sorts, impacting schooling, social relations and quality of life. The literature highlights the role of family functioning, parental experience, and early stage integrated care in child disorders' reduction. Based on cognitive-behavioral theories, we developed a multi-modal program named COMETE for children survivors and their family. Our aim was to refine this program design.

**Methodology or Methods:** The program is composed of 6 modules. Two modules – one on social-skills and the other one on neurocognitive skills – are mandatory for children joining the program. The four other modules are optional, depending on each family's specific needs: difficult emotions management module for children; parental support and guidance module; family functioning and relaxation techniques modules designed for the whole family. A mixed-method including a single case study design will be conducted.

**Impact on practice or Results:** Twelve families were involved in the first stage of the study. Group management with a focus on cognitive remediation makes it possible to work more effectively on the common difficulties presented most widely by these children.

This feasibility study allowed us to improve the program on the organizational aspect more than on the content sessions. Changes to the program were made accordingly to participants' feedback.

**Discussion or Conclusions:** This innovative program intends to reduce inequalities in care access and brain tumor's long-term impact. A pilot study will be conducted to evaluate the effect of this multi-modal program

on children survivors' emotional, cognitive and behavioral skills, as well as family functioning, and parental distress.

### 568 | From Struggle to Transformation: Qualitative Findings Following Mindfulness-Based Stress Reduction for Fatigued Cancer Survivors

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**Background/rationale or Objectives/purpose:** Cancer survivors often experience persistent fatigue long after completing treatment. Because there is typically no somatic etiology, nonmedical interventions, including mindfulness-based interventions, have been recommended as first-line therapy for managing fatigue. During a randomized trial of mindfulness-based stress reduction (MBSR) for fatigued cancer survivors, we conducted qualitative interviews to glean deeper understanding of MBSR's impact on fatigue and other outcomes.

**Methodology or Methods:** Fatigued cancer survivors who completed MBSR were invited to share their experiences in semi-structured qualitative interviews. Participants (n = 20) were primarily White (75%) and diagnosed with early-stage breast cancer (75%). Their mean age was 54.3 (SD = 9.5) and mean time since treatment completion was 1.8 years (SD = 1.1). Thematic analyses of interview transcripts were conducted using a deductive approach.

**Impact on practice or Results:** Three primary themes emerged. Survivors reported (1) increased compassionate awareness of sensations, thoughts, and emotions following MBSR. This led to (2) greater perceiving and transcendence of their personal narrative. Survivors noted counterproductive effects of fighting fatigue and that unhooking from their pre-study outlook facilitated stress reduction and opened new possibilities. This narrative shift promoted (3) behavior change and symptom reduction. These outcomes seemed to initiate an adaptive cycle, wherein survivors continued achieving greater awareness of their experiences while uncoupling sensory experiences from their narrative, leading to enduring symptom improvement.

**Discussion or Conclusions:** Findings suggest MBSR promotes a shift from a narrative of struggle to one of possibility, which in turn may improve quality of life and symptoms like fatigue. Future research should explore mediators of MBSR's effects on fatigue and other outcomes.

### 519 | The SEA-CHANGE study: Protocol for a pilot randomised controlled trial of the Self-management After Cancer of the Head And Neck Group intervention

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**Background/rationale or Objectives/purpose:** While the utility of self-management interventions has been demonstrated across a number of long-term health conditions, methodologically sound and theoretically-based studies examining self-management interventions aiming to support and empower head and neck cancer (HNC) survivors to manage post-treatment challenges are lacking. This pilot trial's purpose is to test the feasibility of implementing SEA-CHANGE, a theoretically-derived intervention designed to increase health-related quality of life (HRQL) in HNC survivors following the completion of primary treatment.

**Methodology or Methods:** This study is a two-armed (intervention vs usual care) non-blinded pilot randomised control trial. Ethical approval has been obtained. A qualitative process evaluation will assess

the feasibility of the intervention. Over a 12 month period, people who have completed primary treatment for HNC will be recruited from three hospitals and randomised on a 1:1 basis to the intervention or usual care group (control). The intervention comprises six weekly 150 minute group-based sessions, covering various topics (Taking Stock, Healthy Me, Taking Care of You I & II, Interacting with Family and Friends, and Looking Ahead). The primary outcome of interest of the intervention is HRQL; secondary outcomes are distress, fear of recurrence, participation in life activities and healthcare utilisation.

**Impact on practice or Results:** With rising numbers of HNC survivors this trial's focus on how best to support the transition from patient to survivor has the potential to directly impact national and international provision of follow-up care for HNC survivors.

**Discussion or Conclusions:** It is anticipated that the intervention will achieve tangible health, social and economic returns at an individual and societal level.

### 513 | Grieving the loss in children with brain and other malignant tumors in pediatric oncology clinic

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**Background/rationale or Objectives/purpose:** Grieving the loss of a loved one together with other losses during cancer treatment - health, appearance, separation from the close etc. - children produce a number of somatic, emotional, behavioral symptoms worsening their physical and psychological condition. Children's models of grief aren't enough studied in terms of clinical manifestations and psychotherapeutic approaches particularly in pediatric oncology clinic.

**Aim:** to study grief manifestations in cancer children and effectiveness the method of Jungian Sandplay therapy.

**Methodology or Methods:** Eighteen children aged 3–13 (average 7.2). Twelve were grieving the loss of mother (6 of them - both mother and other family member); 2 – siblings, 1 – father, 3 – grandfather. Sandplay therapy was performed to all children.

**Impact on practice or Results:** All children experienced masked grief surfaced as somatic and behavioral symptoms due to undeveloped defense mechanisms and overwhelming emotions aggravated by life-threatening disease, multiple losses. Emotional reaction to separation was manifested mainly by search behavior; anxiety; irrational guilt; strong fear of death. To cope with negative affect all children demonstrated autoaggressive behavior; 3 - self-harm; 7 - depression with refusal of food and activity; 1 – hallucinations; 2 – phobias; 1 – regression and mutism; 11 - somatic symptoms. After the course of psychotherapy all children were able to accept the loss, express their negative feelings, mobilize resources to adapt.

**Discussion or Conclusions:** Sandplay allows to project the traumatic experience of loss in the symbolic space of the sandbox, express it in more accessible and safer way, release the energy previously needed to block affects. It is important to provide psychotherapeutic assistance to cancer children before manifestation of pathological grief symptoms.

### 493 | Feasibility of Fear-Less: a stepped-care model to treat fear of cancer recurrence and progression in patients with stage IV melanoma treated with immuno- or targeted therapies

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**Background/rationale or Objectives/purpose:** Fear of cancer recurrence (FCR)/fear of progression (FoP) is highly prevalent and a significant

unmet need of patients with cancer, including melanoma. Emerging research suggests patients receiving novel therapies may be at high risk of FCR/FoP due to the uncertain treatment outcomes. Our project aims to implement a stepped care model for treating FCR/FoP in patients with stage IV melanoma treated with immuno- or targeted therapies.

**Methodology or Methods:** Sixty patients with stage IV melanoma will be screened for FCR/FoP at two metropolitan hospitals in Melbourne, Australia. FCR and FoP will be assessed using the FCRI-SF and FoP-Q-SF. Preliminary results with 16 patients demonstrated that 50% of patients experienced moderate to severe levels of FCR/FoP. Patients with moderate FCR/FoP levels will be triaged to a self-management intervention that includes a purpose-designed CBT-based self-management booklet, with brief telephone support to reinforce CBT skills. Patients with high FCR/FoP levels will be referred ConquerFear, a five-session individual psychology intervention with demonstrated efficacy for reducing FCR. Baseline assessments will be repeated at 5 weeks. Feasibility and acceptability of the stepped care model will be assessed through patient and health professional surveys.

**Impact on practice or Results:** This project will determine the feasibility and acceptability of implementing stepped FCR/FoP care into routine practice. If acceptable, the stepped care model will inform cancer service responses to FCR/FoP.

**Discussion or Conclusions:** It is anticipated that the model of care will lead to effective identification and treatment of FCR / FoP. It has the potential for uptake in other cancer groups.

### 483 | Knowledge Translation in Oncology: Development of an Interactive Family Caregiver Decision Guide

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**Background/rationale or Objectives/purpose:** Interventions are needed to support family caregivers who provide essential care at home for persons who have cancer. The objective of this project was to develop and test an intervention for family caregivers that would support decision making throughout the process of providing care.

**Methodology or Methods:** A 5-phased, sequential multiple methods study was undertaken. Phase 1 involved an evidence review to develop the underpinnings of the intervention. Following the process for development of patient decision aids, an initial version of the Family Caregiver Decision Guide (FCDG) was developed. Phase 2 involved 3 focus groups with caregivers (14) for someone who had died of cancer to assess understandability and acceptability of the FCDG. Cognitive interviews were conducted in Phase 3 with current family caregivers (8) to understand their responses to the FCDG. In Phase 4, an implementation study explored the use of the FCDG in real life situations. In Phase 5 an interactive, web-based version of the FCDG was developed.

**Impact on practice or Results:** Each phase resulted in a more robust version of the FCDG that was aesthetically appealing, clearly structured, understandable, comprehensive, and useful to the caregiver participants. The FCDG was highly successful in raising questions and concerns for the caregivers. Hospice volunteers proved effective in supporting use of the FCDG, with nurse back-up to address illness-related concerns. Caregivers needed to receive the FCDG early in their caregiving experience.

**Discussion or Conclusions:** The FCDG is a promising intervention to support family caregivers in providing care to someone at home who has cancer and reinforce the importance of their work.

### 460 | Cost-effectiveness analysis of the CALM psychosocial intervention for patients with advanced cancer: A health care funder perspective

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**Background/rationale or Objectives/purpose:** Psychosocial interventions address the mental distress patients may experience during or after their cancer treatment. Managing Cancer and Living Meaningfully (CALM) is a brief supportive-expressive psychotherapy aimed to relieve depression in individuals with advanced cancer, which has shown to be clinically effective, but the cost-effectiveness has not been established.

**Methodology or Methods:** A cost-effectiveness analysis from the perspective of the funder was conducted using a decision tree model. Model inputs were derived from RCT trial data and costs were estimated using data holdings from an urban health centre. Change in depression severity tiers as measured by PHQ-9 questionnaire at 6 months was the primary outcome. The incremental cost-effectiveness ratio (ICER) was calculated and one-way and probabilistic sensitivity analyses were conducted to assess the robustness of the findings.

**Impact on practice or Results:** A total of 54 participants in the intervention arm and 59 in the control arm were included in our study. The ICER for the base case scenario was \$1,439.15/tier. This ranged from \$798/tier to \$4,949/tier when sensitivity analyses were conducted. Monte Carlo probability distribution histogram showed that the ICER is less than \$1,300/tier in 50% of simulations and less than \$5,000/tier in 97.5% of model runs.

**Discussion or Conclusions:** Cost-effectiveness analysis for the CALM intervention resulted in an ICER of \$1,439.15 with 97.5% of model runs falling below the \$5,000/tier willingness to pay threshold. Results suggest that the CALM intervention may be delivered in a cost-effective manner to reduce depression by 1 tier of PHQ-9 score when compared to usual care alone in a large urban healthcare centre.

#### 443 | The Role of Cognitive Behavioral Therapy (CBT) in the management of Depression in patients with advanced breast cancer

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**Background/rationale or Objectives/purpose:** Background Breast cancer is a feared diagnosis and a source of depression in cancer patients. Studies have reported up to 58% of cancer patients as having depressive symptoms and up to 38% as having major depression. Cognitive behavioural therapy was found to be a gold-standard for depression management. It focuses on the development of personal coping strategies that target solving current problems and changing unhelpful patterns of thinking, behaviours, and emotional reactions.

**Rationale for the study** The theory of CBT is based on the interrelationship of thoughts, actions, and feelings.

CBT as a gold-standard for depression management is under-utilized.

Advanced breast cancer patients have many unmet psychological needs, hence the need for this intervention using CBT

**Methodology or Methods: Study design:** A prospective randomized pre and post study.

**Procedure:** Demographics and clinical information were obtained from the patients using a self-administered questionnaire at pre-test. The intervention had six (6) sessions, one session per week for a period of six (6) weeks and each session lasted for 90 minutes. The theoretical model is based on Albert Ellis and Aaron Beck

**Impact on practice or Results:** Participants in the CBT group (M = 3.94, n = 14) had significant lower depressive scores compared to the participants in the control group (M = 13.23, n = 13). Also within the CBT intervention group alone the participants' post-test depressive

scores (M = 3.5, n = 14) were significantly lower compared to their pre-test depressive scores (M = 12.05, n = 20).

**Discussion or Conclusions:** CBT is effective in reducing depressive symptoms among patients with advanced breast cancer.

#### 433 | The development and clinical effectiveness of a laughter intervention

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**Background/rationale or Objectives/purpose:** Laughter was shown to have positive impacts on the mind and body. The development and clinical effectiveness of a laughter intervention was worthy to be explored.

**Methodology or Methods:** Prospective intervention study was designed. The therapeutic laughter intervention combined of Chinese qi and tai-chi techniques was developed, which had five parts of the warm-up, body stretching, deep breathing, emotional transformation, and cool down. The study population (n = 37) was adult and recruited from a neurosis acute psychiatric ward of a teaching hospital in the north of Taiwan. Weekly programs (35 min) adding every introduction (5 min) and end-up sharing (5 min) stages and in final 15 min to get the qualitative and quantitative data, were proceeding in each group on fixed weekday for 13 weeks. Outcome measures included subjective psychological indicators (anxiety, mood, and stress tension), subjective body sensation changes (parasympathetic effects in various parts of the body), and objective physiological indicators (vital signs, blood pressure, and sleep time).

**Impact on practice or Results:** The laughter intervention is better in improvement of subjective psychological and subjective/objective physiological indicators.

**Discussion or Conclusions:** The lesson was learned that the laughter intervention as a therapeutic psychosocial intervention is beneficial to neurotic psychiatric patients. For future direction, it could be applied to cancer patients for adjusting their psychological or physical symptoms.

#### 426 | Effects of mindfulness-based cognitive therapy on breast cancer survivors with insomnia: a randomized controlled trial

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**Background/rationale or Objectives/purpose:** Insomnia commonly disrupts the quality of life of cancer survivors. This study investigated the effects of mindfulness-based cognitive therapy (MBCT) on insomnia in breast cancer survivors (BCS).

**Methodology or Methods:** Participants (n = 136) were randomly allocated to the MBCT-I group or a waitlist control (WLC) group. Symptoms of insomnia and mindfulness were evaluated using the Insomnia Severity Index (ISI), sleep diaries, actigraphy and the Five Facet Mindfulness Questionnaire (FFMQ). Data were collected at baseline (T1), post-intervention (T2), 3-month follow-up (T3) and 6-month follow-up (T3) time points.

**Impact on practice or Results:** We noted positive effects on insomnia severity, sleep diary recordings, actigraphy readings and mindfulness in MBCT-I subjects. The proportion of people without insomnia increased by 7.9% while clinical sleep decreased by 59.6%. A significant correlation was observed between average home practice time and wake after sleep onset (WASO) decrease (r = 0.297, p = 0.016) in sleep diary recordings.



**Discussion or Conclusions:** On the basis of the results of this study, MBCT-I is an effective alternative to traditional sleep treatments for BCS with insomnia.

#### 415 | Comparison of Virtual Reality to Guided Imagery for Pain and Anxiety Management in a Pediatric Hematology/Oncology/Blood and Marrow Transplant Setting

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**Background/rationale or Objectives/purpose:** The purpose of this comparative effectiveness study was to determine whether an empirically-supported intervention (guided imagery, "GI") or an immersive technological approach (virtual reality, "VR") best managed pain and anxiety during procedures (i.e., port access, IV start, dressing change) in a pediatric hematology-oncology population.

**Methodology or Methods:** Forty-seven patients with cancer or a blood disorder aged 8–23 years (M age = 14.06) were included. Patients received both interventions, with randomized counterbalancing to account for order effects. Pain was assessed via a visual analogue scale. Anxiety was assessed via the State-Trait Anxiety Inventory. Patients also completed a post-study survey.

**Impact on practice or Results:** Paired samples t-test analyses identified a significant change in anxiety from pre- to post-procedure for VR ( $p = 0.005$ ) but not the GI condition. Results of two-way (time\*condition) within-subjects ANOVA suggested no statistically significant difference in pre- to post-procedure anxiety between VR (M Change = -2.89) and GI (M Change = -1.21), though there was a trend in the hypothesized direction ( $p = .076$ ). There was no difference in highest or average amount of pain during procedures when comparing interventions. Most (80%) participants preferred VR.

**Discussion or Conclusions:** Preliminary results suggest that VR was helpful in reducing anxiety from pre- to post-procedure, but not statistically over what was observed with GI. There was no significant change in pain for either intervention. Compared to prior studies which assessed procedures of longer duration and/or more chronic pain experiences, the types of procedures used in this study may not be of sufficient duration or provoke enough pain to benefit from the more immersive VR experience.

#### 414 | Suicide Screening and Assessment in Cancer Care: Opportunities and Challenges of Integrating a New Electronic Medical Record

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**Background/rationale or Objectives/purpose:** Suicide risk is significantly increased in the oncology population. Screening for suicidal ideation has become routine care at BC Cancer. Our centre is currently undergoing a process of updating the electronic medical record (EMR) to one that includes the Columbia-Suicide Severity Rating Scale (C-SSRS), presenting new opportunities for suicide risk assessment.

**Methodology or Methods:** Between April 2011 and March 2019, 2318 (2.6%) of 88,369 patients responded "a little bit" to "very much so" at first contact with BC Cancer to the prompt "I have recently thought about taking my life" on the Psychosocial Screen for Cancer (PSSCAN-R).

A working group at BC Cancer was created to determine process for triage, assessment and training for using the C-SSRS as part of routine practice.

**Impact on practice or Results:** Since initiating suicide screening as part of routine care, the assessment has been conducted primarily through clinical interview. While we believe implementing the C-SSRS into regular practice could provide greater consistency in suicide assessment, it's unclear if it will reduce risk, and there is concern of inefficiency and even the introduction of errors in judgment.

**Discussion or Conclusions:** Research indicates the importance of health care organizations screening for suicide and ensuring that patients have access to appropriate support at the appropriate time. Transitioning to a new electronic medical record has both challenges and opportunities for suicide screening and assessment.

#### 382 | Cognitive Behavioral Group Therapy for Anxiety Among Cancer Patients in Hong Kong

*Men Heng Marian Wong*

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**Background/rationale or Objectives/purpose:** Anxiety is a major component of distress experienced by cancer patients, affecting around 20% of the population (Pitman et al., 2018). This study assessed the effects of Cognitive Behavioral Therapy (CBT)-based Anxiety Groups specifically designed for Hong Kong (HK) Chinese cancer patients.

**Methodology or Methods:** Twenty-one cancer patients were recruited to the six-session, two-hour, CBT-based anxiety psychotherapeutic group facilitated by a clinical psychologist following a one-off anxiety psychoeducational talk held in various HK Cancerlink Centers between 2017 and 2018. Those obtaining 'Clinical' or 'Borderline' level on the Anxiety subscale of the Hospital Anxiety and Depression Scale were invited to join the group. Participants were asked to complete the HADS immediately after the anxiety group. Paired-sample t-tests were used to analysis the pre- and post-group scores.

**Impact on practice or Results:** Three anxiety groups were held. Following the group, all participants showed significantly reduced HADS-Anxiety subscale score, HADS-Depression subscale score, and HADS Total score (all  $p$

**Discussion or Conclusions:** The development of a trans-diagnostic group on anxiety and depression for cancer patients is warranted given the high comorbidity of anxiety and depressive disorders among cancer patients. Future study can compare the use of transdiagnostic CBT with disorder-specific CBT on patient outcomes.

#### 378 | Quality of life among caregivers of patients with Glioblastoma Multiforme: Psychoeducational Program

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**Background/rationale or Objectives/purpose:** The objective of this study was to investigate the quality of life (QOL) of caregivers of patients with GBM by means of a psychoeducational program oriented to provide guidance and information.

**Methodology or Methods:** The research design was based in an Experimental Group (EG) and a Control Group (CG), both accessed at the beginning and at the end of the study, through a semi-structured psychological interview and the WHOQOL-bref assessment tool. The variable was a psychoeducational program for the family members, consisting of four monthly thematic sessions of 45 minutes each.

**Impact on practice or Results:** Family members reported dramatic changes in their lives. Patients with GBM become highly dependent on their caregivers, who often show an attitude of overprotection that leads to childish behavior of the patient. In terms of psychosocial impact, caregivers consider these tasks very rewarding, despite the clear burden experienced. EG participants showed significant improvement in QOL. The participants obtained answers to their questions about the disease and the treatment. They felt reassured after the program and managed to find a way to connect with the patient. As to CG, QOL got worse in all domains.

**Discussion or Conclusions:** The psychoeducational program proved to be beneficial to them, improving wellness and QOL for the family caregivers. Doctors, nurses, psychologists and social workers will be

interested in this research on cancer patient family needs and psychoeducational intervention.

### 375 | A person-centered e-distress assessment and information support program for patients with cancer: An implementation pilot study

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**Background/rationale or Objectives/purpose:** Distress assessment is becoming a gold standard for true comprehensive person-centered care, but significant barriers exist in the optimization of cancer-related distress measurement and management. In light of the needs for more sustainable and cost-effective approaches, we relied on e-psychosocial support comprising assessment, informational e-handouts and volunteer-based supportive calls for newly diagnosed patients. This pilot study sought to document the acceptability of the e-distress program, examine the nature of participants' requests and assess changes in distress pre-post program.

**Methodology or Methods:** Eighty-eight participants diagnosed with cancer within the last six months in University affiliated cancer centers in Montreal, Quebec, Canada, completed the 25-item Cancer Support Community distress measure (pre-post intervention) and chose to request services in form of e-handouts, supportive calls, both services or nothing.

**Impact on practice or Results:** Compared to baseline, participants reported lower distress post intervention with a significant decrease for participants requesting both services ( $p = 0.003$ ). Compared to participants with no requests, those who requested services reported significant lower distress at follow-up (e-handouts  $t(66) = 2.11$ ,  $p = 0.038$ ; supportive calls  $t(66) = 2.07$ ,  $p = 0.04$ ; both services  $t(66) = 2.96$ ,  $p = 0.004$ ) with pain/physical discomfort and sleep problems being the most frequently requested topics. Participants found the program easy to use with mean system usability scale of 85.5 (SD = 16.35, range: 0–100).

**Discussion or Conclusions:** This e-distress program seems a timely accessible means to respond to individuals' unmet needs. Future work would document the feasibility in cancer centres that have fewer supportive resources or in distant geographical regions.

### 366 | A Positive Psychology Intervention for Hematopoietic Stem Cell Transplantation

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**Background/rationale or Objectives/purpose:** Psychological well-being (PWB) is essential for the successful recovery following hematopoietic stem cell transplantation (HSCT). Efforts to enhance PWB in HSCT patients have largely focused on reducing negative psychological symptoms such as depression and anxiety. Despite the evidence on the impact of positive psychological (PP) constructs (e.g., optimism, positive affect) on PWB in HSCT patients, to our knowledge there are no positive psychological interventions (simple and deliberate activities that enhance positive psychological constructs) adapted for HSCT patients. Hence, we aimed to develop a novel 8-session phone-delivered positive psychological intervention for HSCT patients.

**Methodology or Methods:** Semi-structured interviews were conducted with 25 HSCT patients to explore perceptions of a positive psychological intervention content, delivery methods and adaptation. Data

was transcribed and coded using NVivo software by a psychiatrist and clinical psychologist.

**Impact on practice or Results:** Participants reported an interest in utilizing a positive psychology intervention during the acute recovery from HSCT. PP exercises such as gratitude letters were feasible and acceptable. However, exercises such as performing acts of kindness were considered burdensome due to the required isolation in early recovery. A nuanced understanding of HSCT patients' perception of a variety of PP exercises is necessary to inform the initial development of practical positive psychological interventions for HSCT patients.

**Discussion or Conclusions:** HSCT patients report an interest in utilizing a PP intervention during early recovery from HSCT. Future research should explore the feasibility of PP interventions, tailored to this population, to help maintain and bolster positive psychological well-being, quality of life and function.

### 349 | In-person cancer support groups: Still relevant in a digital world?

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**Background/rationale or Objectives/purpose:** People diagnosed with lung cancer experience elevated distress and have greater unmet emotional needs than people with other types of cancer. Such needs were once almost exclusively met through in-person support groups but in today's digital age, where we can instantaneously connect with others online globally, are such groups still relevant? This study examined satisfaction with in-person lung cancer support groups and their impact on psychosocial outcomes: distress, loneliness, self-efficacy, and quality-of-life.

**Methodology or Methods:** Lung cancer survivors and loved ones enrolled in seven in-person lung cancer-specific support groups. Using validated measures to assess cancer-related distress (15-item CSS, Cancer-SupportSource®); loneliness (UCLA Three-Item Loneliness Scale); and group satisfaction (Helpful Group Experiences Questionnaire), baseline and six-month follow-up surveys were administered.

**Impact on practice or Results:** Eighty-six participants completed baseline questionnaires, 29 completed/partially completed follow-up surveys. Descriptive statistics showed that confidence in making treatment decisions was high (86%), as was confidence in communicating with the healthcare team and ability to access information and resources (both 90%).

Univariate Analyses demonstrated statistically significant decreases in total cancer-related distress but not loneliness or positive affect. Group satisfaction was high, with 100% ( $n = 27$ ) indicating they would recommend their group to others.

**Discussion or Conclusions:** These preliminary results indicate in-person support groups serve an important role in relieving distress and providing connection for people with lung cancer and their loved ones.

People with lung cancer have especially high rates of distress. Digital support may be convenient but are, perhaps, complementary to and not a substitute for, in-person connection with others who understand.

### 343 | Beneath the 'PROM'? What people affected by cancer really value from services: Thematic synthesis of findings from two national cancer programmes

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**Background/rationale or Objectives/purpose:** Internationally, little is known about how services contribute to positive changes in Patient Reported Outcome Measures (PROMs) from the patients' perspective. This study identified the critical service components that people affected by cancer really value.

**Methodology or Methods:** Qualitative thematic synthesis from the evaluation of two national cancer programmes in Scotland delivering ho-

listic support to newly diagnosed patients and those entering a survivorship phase ('Transforming Care After Treatment' and 'Improving Your Cancer Journey'). Participants were purposively sampled to capture a diverse range of age, sex and cancer types. Thirty-six semi-structured interviews explored views and experiences of holistic assessment and support.

**Impact on practice or Results:** Four themes were identified that captured the underlying value and benefit of psycho-social interventions for people affected by cancer: (1) 'cancer being acknowledged' (2) 'connections and connectedness to support'; (3) 'reassurance' (4) 'positive interactions'.

**Discussion or Conclusions:** Four proximal outcomes were found to underpin PROMs. However, these are rarely measured and less readily quantified. To gain a deeper understanding of why interventions are valued by patients and how they may contribute to PROMs it is vital that researchers learn what lies beneath PROMs. By doing so, measurable outcomes can be prioritised and the whole impact of support services will be better understood to inform service design, delivery and evaluation.

### 336 | Preliminary Findings on Complications, Healthcare Utilization, and Costs in Cancer Patients With Comorbid Depression Receiving a Stepped Collaborative Care Intervention

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**Background/rationale or Objectives/purpose:** The aims of this study were to test the efficacy of a stepped collaborative care intervention for comorbid cancer and depression on outcomes including complication rates, health care utilization and costs in advanced cancer patients.

**Methodology or Methods:** Patients diagnosed with cancer were enrolled in a randomized controlled trial testing the efficacy of a stepped collaborative care intervention. Patients were administered a battery of questionnaires before randomization. Rates and severity of complications, healthcare utilization and costs were collected for one year after 1.5 months after treatment initiation. Descriptive statistics, Chi-square analyses, and Ordered Restricted Inference analyses were performed.

**Impact on practice or Results:** Of the 100 patients, the mean age was 64 years (SD = 10.3), the majority of the patients were male (51%), Caucasian (89%), diagnosed with hepatocellular or cholangiocarcinoma (47%) and stage III and IV cancer (59%). For patients less than 75 years, patients randomized to the intervention arm had lower rates of complications after surgery [ $X^2 = 5.45$ ,  $p = 0.02$ ]. For patients who survived 6 months or less, those who underwent the intervention had lower rates of 90-day readmissions than patients who were screened and referred [ $X^2 = 4.0$ ,  $p = 0.046$ ]. Patients in the intervention arm had financially-meaningful lower median costs including work-related absenteeism (\$2340 versus \$3000,  $p = 0.07$ ), hospital costs (\$13,008 versus \$21,109,  $p = 0.09$ ), and cost per registration (\$1158 versus \$2219,  $p = 0.07$ ) when compared to the screening/ referral arm.

**Discussion or Conclusions:** The stepped collaborative care intervention reduced complication rates, health care utilization, and costs associated with work-related absenteeism and hospital-related costs. Further testing the intervention in a dissemination and implementation trial is recommended next steps.

### 327 | Pilot testing of a group format of Conquer Fear, a psychological intervention for fear of cancer recurrence

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**Background/rationale or Objectives/purpose:** Fear of cancer recurrence (FCR) is a common and distressing condition affecting a large number of cancer patients and survivors. The individually delivered face-to-face psychological intervention Conquer Fear has been shown to reduce FCR. The present study pilot-tested the effect and acceptability of a group delivered format of Conquer Fear (Conquer Fear Group).

**Methodology or Methods:** The study included seven stage I-III breast cancer survivors who had completed primary treatment 3 months to 5 years prior to the study. Patients were eligible if they scored above the clinical cutoff ( $\geq 22$ ) on the Fear of Cancer Recurrence Inventory-Short Form (FCRI-SF). Participants received one 1½-hour individual session followed by five 2-hour group sessions of Conquer Fear, targeting metacognitions and clarifying values. The primary outcome measure, Fear of Cancer Recurrence Inventory (FCRI) total score, was completed at baseline, postintervention, and 3 and 6-months follow-up.

**Impact on practice or Results:** FCRI scores appeared to increase from baseline to postintervention ( $d = -0.65$ ;  $p = 0.135$ ), but overall decreased both from baseline to 3-month follow-up ( $d = 2.09$ ;  $p = 0.010$ ) and baseline to 6-month follow-up ( $d = 0.90$ ;  $p = 0.115$ ), with the preliminary effects corresponding to large effect sizes.

**Discussion or Conclusions:** Echoing previous findings in an individual setting, Conquer Fear Group appears to have the potential to reduce FCR. However, the efficacy needs to be tested in randomized trials and reasons for the deterioration at postintervention should be further explored. Conquer Fear Group appears feasible, and may be a cost-effective alternative to reduce FCR if efficacy is confirmed.

### 324 | The role of mindfulness in dying and grieving: A qualitative study among partners of deceased lung cancer patients

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**Background/rationale or Objectives/purpose:** Losing a loved one to cancer is one of life's greatest stressors. Supporting patients and partners during the disease trajectory can benefit the dying and grieving process. This qualitative study explored whether mindfulness played a role in the dying and grieving process among partners who had participated in Mindfulness-Based Stress Reduction (MBSR) together with the patient.

**Methodology or Methods:** Partners were recruited as a follow-up to either a pilot study or randomized controlled trial in which lung cancer patients and their partners participated together in MBSR. We conducted in-depth interviews lasting 40 to 90 minutes at least 3 months after the patient's death. Each interview started with how the patient's death was experienced. Subsequently the role of mindfulness during the dying and grieving process was explored. By applying the constant comparative method we developed a grounded theory.

**Impact on practice or Results:** We interviewed 11 partners (8 women). They mentioned how the mindfulness practice helped patients regulate their thoughts and emotions, accept their forthcoming death and wish the partner a good future. Moreover, mindfulness helped patients and partners to communicate more openly and enjoy the precious moments they had left together. It also helped partners' grieving process; they were better able to allow their sadness, let go of the past and take better care of themselves.

**Discussion or Conclusions:** These qualitative findings indicate that when couples coping with lung cancer participate in MBSR it can bring



patients and partners closer together, help them to accept the patients' death, and help partners to take better care of themselves.

### 307 | Is it feasible, acceptable and safe to deliver online group-based psychological support to parents after their child's cancer treatment? A three-armed randomized trial of 'Cascade'

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**Background/rationale or Objectives/purpose:** Completing cancer treatment can represent a time of uncertainty and vulnerability. Online group-based psychological therapies could provide an opportunity for parents of young cancer survivors (0–18 years) to develop coping skills and connect with others. We investigated whether 'Cascade', a four-session, videoconferencing group-based cognitive-behavioural intervention, was feasible, acceptable and psychologically safe. Cascade aimed to improve parents' quality of life in the early stages of their child's survivorship.

**Methodology or Methods:** A randomised-controlled trial compared Cascade with an online peer-support group and waitlist control. Parents completed baseline, 1-week, 5-week and 6-month post-intervention questionnaires. We used enrolment rates, participant engagement and perceived benefit/burden to ascertain feasibility and acceptability. We monitored distress weekly to determine safety. We delivered six Cascade and five peer-support groups (2–4 parents/group).

**Impact on practice or Results:** Seventy six parents opted-in to the study, 55 of whom enrolled in the program (87% mothers; 67% from major cities; mean child age: 8 years; 35% leukemia/lymphoma). Parents were randomized to Cascade (n = 20), peer-support (n = 17) or waitlist (n = 18). 90% of parents completed ≥3/4 Cascade sessions. Perceived benefit outweighed perceived burden, with 92% of parents rating participation as beneficial and 69% rating it as 'not at all' burdensome. 24% of parents returned a clinically-concerning distress screen at some point during the study, however upon further assessment, none were at immediate mental health risk.

**Discussion or Conclusions:** Findings suggest that Cascade is a useful model for delivering psychological support after cancer treatment completion. Further trials will be important to determine whether Cascade elicits improvements in quality of life.

### 292 | Self-efficacy and Quality of Life in Italian Breast Cancer patients

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**Background/rationale or Objectives/purpose:** Self-efficacy plays a critical role in health behaviors, quality of life and treatment compliance in breast cancer. This study aims to describe the relationship between coping self-efficacy and both quality of life and anxiety-depressive symptoms in Italian breast cancer patients.

**Methodology or Methods:** The sample consisted of 165 breast cancer patients (mean age = 50.1; range age = 27–76 years), including those undergoing treatments (surgery: 72.2%; radiotherapy: 41.7%; hormone therapy: 66.7%) as well as survivors. They completed the following questionnaires: EORTC QLQ-C30, EORTC QLQ-BR23, Cancer Behavior

Inventory – Brief Version (CBI-B), Hospital Anxiety Depression Scale (HADS).

**Impact on practice or Results:** Preliminary results showed high positive correlations between self-efficacy and Global Health Status (r = 0.62), as well as between self-efficacy and the Emotional (r = 0.56), Cognitive (r = 0.38), Physical (r = 0.38), Social (r = 0.37) and Role functioning (r = 0.32) scales of EORTC QLQ-C30. Positive correlations emerged between self-efficacy and the Future perspective (r = 0.47) and Body image (r = 0.32) scales of EORTC QLQ-BR23. Conversely, negative correlations were found between self-efficacy and the Fatigue (r = -0.42), Pain (r = -0.41) and Insomnia (r = -0.38) symptom scales of EORTC QLQ-C30. Also, negative correlations emerged between self-efficacy and the Breast symptoms (r = -0.33) and Systemic therapy side effects (r = -0.31) scales of EORTC QLQ-BR23. Finally, high negative correlations were found between self-efficacy and psychological distress based on the HADS (anxiety/ depression) total score (r = -0.79).

**Discussion or Conclusions:** These preliminary data highlight the key role of coping self-efficacy skills for breast cancer patients and suggest implications for interventions that focus on enhancing self-efficacy for coping.

### 281 | Alexithymia, Dyadic Adjustment, and Dyadic Coping in Breast Cancer: A cross-sectional study

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**Background/rationale or Objectives/purpose:** Couples facing breast cancer have to cope with stressors that can affect both partners and their relationship. Patients and their partners could find difficulties not only in recognizing and expressing emotions but also in the couple's adjustment. This study aims to explore the impact of breast cancer on some individual and dyadic variables of patients and their partners, such as alexithymia, dyadic adjustment, and dyadic coping.

**Methodology or Methods:** Thirty-six subjects participated in the study: 19 women with a history of breast cancer (I-II stages or survivors) and their male healthy partners. The mean age of the subjects was 26 years. Their average educational level was high school. Their relationships lasted from 3 to 42 years. All participants completed the following self-reported questionnaires: Hospital Anxiety Depression Scale (HADS), Toronto Alexithymia Scale (TAS20), Dyadic Adjustment Scale (DAS), and Dyadic Coping Questionnaire (DCQ).

**Impact on practice or Results:** Male partners showed higher levels of alexithymia than female patients. A negative correlation between alexithymia and dyadic adjustment was found (r = -.398, p = .05). In healthy partners a negative correlation between alexithymia and dyadic coping was observed (r = -.284, p = .05). Finally, a positive correlation between dyadic adjustment and dyadic coping (r = .669, p = .01) emerged.

**Discussion or Conclusions:** The correlation between alexithymia and dyadic adjustment seems to be relevant only in caregiver partners. In psycho-oncology, interventions should be focused on emotive, relational and intersubjective issues not only in cancer patients but also in caregivers.

### 267 | Support, Meaning, and Shared Experiences: The Unintended Consequences of Participating in a Learn to Run Program After Cancer

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**Background/rationale or Objectives/purpose:** Although cancer survivors are often aware that physical activity can ameliorate some of the physical and emotional issues associated with survivorship, many still find it difficult to engage in exercise. This research provides detailed

documentation of the processes associated with initiation and maintenance of physical activity by cancer survivors, as well as intended and unintended benefits of participating in a group intervention.

**Methodology or Methods:** Participants completed an 8-week program that combined running training with group-mediated cognitive behavioural intervention designed to build coping skills and address barriers to physical activity. Weekly interactive workshops consisted of task-oriented topics (e.g., running technique) and group-mediated cognitive behavioural topics (e.g., goal setting). The entire program was filmed, and thematic analysis applied to the recordings. A video documentary was created using a participatory approach that allowed participants to directly influence how the results are presented and disseminated.

**Impact on practice or Results:** Identifying barriers to physical activity for cancer survivors is an important first step to finding ways to help cancer survivors to engage in exercise post-treatment. Recognizing the potential for secondary support benefits for participants in a group exercise program can be helpful in the design and implementation of similar interventions.

**Discussion or Conclusions:** Study findings highlight some of the benefits experienced by the program participants such as improved coping skills and physical fitness, and increased confidence in their ability to be active. Participants also discussed a number of unintended benefits of the program such as increased feelings of support, connection through shared experiences, and finding meaning after cancer.

## 267 | Systematic review and thematic synthesis of the implementation and impact of holistic needs assessments for people affected by cancer

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**Background/rationale or Objectives/purpose:** International government and clinical policy recommends individuals affected by cancer should have all their needs assessed. Implementation of holistic needs assessments (HNA) is however heterogeneous, involving different assessors, assessment tools, location, stage and types of cancer. This systematic review and thematic synthesis is the first to answer Does the way in which HNA is implemented, impact on the outcomes?

**Methodology or Methods:** MEDLINE, AMED, CINAHL, PsycINFO and the Psychological and Behavioural Sciences Collection were searched (2000 - 2017). Search strategy ensured inclusion of international HNA tools and synonyms for 'needs'.

**Impact on practice or Results:** Three researchers reviewed 828 studies, 20 met the inclusion criteria and included randomised controlled trials (n = 4), findings of local service evaluations (n = 8) and feasibility studies (n = 8). Variability in tool, purpose, approach and assessor actions were found. Implementation approaches that impact on outcomes are identified. Evidence on patient outcomes is diffuse and dominated by those of measurable interest to researchers.

**Discussion or Conclusions:** This significant review of global studies proposes that pursuers of outcomes of HNA are looking in the wrong place for evidence. More fruitful areas of enquiry are those that re-establish the connection between actions and outcomes. Actions of assessors are classified as detecting, dealing and directing and a typology of assessment for people affected by cancer is proposed. There is a need for researchers and practitioners to reconceptualise HNA as a means and not an end in itself.

## 264 | Group psychotherapy following primary therapy for gynecological malignant tumor: a randomized controlled pilot study

*Zimeng Li, Lili Tang*

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**Background/rationale or Objectives/purpose:** To examine if a group psychotherapy offers significant benefits to psychological wellbeing for gynecological malignant tumor patients in China.

**Methodology or Methods:** 60 patients with gynecological malignant tumor participated in this study, The intervention group (n = 30) received weekly session group psychotherapy for 6 weeks, and the control group (n = 30) accepted weekly session patients' education for 6 weeks. Functional Assessment of Cancer Therapy-G (FACT-G), Hospital Anxiety and Depression Scale (HADS), The Chinese Versions of the Memorial Symptom Assessment Scale Short Form MSAS-SF were used for assessment at baseline (on enrollment), 6-week follow-up and 12 week-follow-up, and Medical Coping Modes Questionnaire (MCMQ) only for baseline. Repeated measures ANOVA were used for intergroup analysis.

**Impact on practice or Results:** The results shows the scores of anxiety (F = 15.83, P < 0.001), depression (F = 23.04, P < 0.001) declined and the total score of FACT-G (F = 92.84, P < 0.001) increased after intervention in each group. The differences between groups show significant in the score of anxiety (F = 7.3, P = 0.009), depression (F = 4.61, P = 0.036), but not significant in total score of FACT-G. Coping style of resignation is significantly positively correlated with anxiety (r = 0.533, P < 0.01), depression (r = 0.529, P < 0.01), and the total score of FACT-G (r = -0.472, P < 0.01). (Selected)

**Discussion or Conclusions:** Group psychotherapy can improve emotion state and quality-of-life in gynecological malignant tumor patients, showing good long-term effect. And coping style is an influencing factor on patients' emotion and quality of life.

## 256 | What happens after positive cancer distress screening? A novel look toward optimizing predictive validity of screening and reducing health care costs

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**Background/rationale or Objectives/purpose:** The ultimate goal of cancer distress screening is to reduce cancer distress. In isolation, screening is ineffective. Follow-up components (referral, evaluation) prior to intervention are essential, but understudied. A 2019 review estimated 11–12% of referrals result in intervention. We evaluated the downstream process of cancer distress screening within the context of a controlled intervention trial.

**Methodology or Methods:** Trial recruitment and enrollment data were utilized starting within 24 hours prior to scheduled evaluation appointment time and ending with group intervention enrollment. Sensitivity analyses were used to estimate the percentage of scheduled referrals resulting in intervention, as well as potentially unnecessary referrals.

**Impact on practice or Results:** Of 294 scheduled patients, 20.1% received group intervention and 10.9% cancelled/no-showed. Of 262 patients who completed evaluation (diagnostic interview), 29.0% were referred for individual therapy (the most common indication being severe or chronic/trait distress) and 67.9% were referred for group cancer distress management intervention. Over 70% of group referrals declined enrollment, due to geographic distance/time/scheduling (43.3%) or lack of interest (27.8% of declining [16.3% of eligible, 9.9% of referrals]). Sensitivity analyses suggest that detection of lack of interest at time of screening might eliminate 19.4% of referrals and associated downstream costs.

**Discussion or Conclusions:** Assessing patient interest in distress intervention at the point of distress screening may eliminate approximately 20% of referrals and associated health care costs. Future research should examine the impact of patient interest on incremental predictive

validity of screening, downstream health care costs, and patient satisfaction. Potential benefits of consultation without intervention should also be investigated.

### **243 | How to Teach Healthy Sexuality in Men Suffering from Erectile Dysfunction after Prostate Cancer**

*Rob Rutledge, Rob Rutledge*

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**Background/rationale or Objectives/purpose:** The majority of men who have been treated for prostate cancer (PC) suffer from erectile dysfunction, and 60–75% of all PC survivors identify sexuality and intimacy issues as a major concern. Little education or support is available to directly address these issues. Here, we explore the common sexual problems and offer practical solutions for erectile dysfunction to help men experience a healthy sexuality and more intimacy after PC.

**Methodology or Methods:** The presentation includes the content and evaluation of four day-long empowerment seminars and multiple public talks designed for the men and partners affected by PC. Five evidenced-based teaching sections constitute the elements of the seminar: (1) Healthy Aging / Sexuality (2) Types of Intimacy; (3) Emotional connection (4) De-cluttering relationship exercises; and (5) Practical solutions for erectile dysfunction by exploring new paths to greater intimacy and non-penetrative sexuality. The presentation offers techniques to help men rediscover the many aspects of intimacy.

**Impact on practice or Results:** This day-long seminar has been successfully presented in four Canadian cities and evaluated by 73 participants using self-administered questionnaires. Overall the group averages rating the entire seminar ranged from 8.4 to 9.6 out of 10. Exercises directly addressing practical solutions to facilitate healthy sexuality rated highest. Written comments included in these evaluation will be discussed.

**Discussion or Conclusions:** The results presented show that patient education and empowerment programs that include teaching related to intimacy, connection and healthy sexuality for men with PC are in high demand and are very well received. Further interventional research is needed to address this common problem.

### **239 | Prostate Cancer - Patient Empowerment Program (PC PEP) - An Intensive Multidimensional Program Addressing Mental Distress in PC Survivors - Results of a 28-day Feasibility Study**

*Gabriela Ilie, Robert D.H. Rutledge*

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**Background/rationale or Objectives/purpose:** A recent literature review showed that approximately 1 in 6 prostate cancer survivors experience clinical depression which affects oncological quality of life outcomes. In a feasibility study of a 28-day home-based program we assessed the effectiveness of the program in reducing mental distress, in addition to evaluating participants' compliance to the various components of the program (exercise, meditation, intimacy and social connection), program feasibility, as well as secondary psychosocial quality of life outcomes. Technology supported the implementation of this program.

**Methodology or Methods:** 30 PCa survivors (mean age = 59) with email access, who did not have any health conditions that prevented them from exercising, participated in the study. Program compliance was assessed weekly. Physical and psychosocial quality of life (QoL) outcomes were obtained pre- and post- intervention. The primary outcome of interest was a validated assessment of mental health disorder, Kessler Psychological Distress Scale (K10). Mixed methods were used to evaluate the results.

**Impact on practice or Results:** McNemar analyses pre-post intervention revealed a statistically significant reduction in mental distress. Participants exhibited high levels of compliance on all aspects of the

program, with the strength component exceeding prescribed recommendations. Several improved physical (weight, diastolic blood pressure, flexibility, endurance sit to stand) and psychosocial (e.g., improved relationship satisfaction) outcomes emerged and will be discussed.

**Discussion or Conclusions:** Results show that preventive life habits programs that can empower men and address many of the issues faced by men undergoing active forms of PCa treatments - are highly needed, well received and adopted by survivors. A clinical trial for PC-PEP for pre-habilitation is warranted and in process.

### **238 | Self-Image and relationship issues always all around: reflecting the process of screening suicide risk**

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**Background/rationale or Objectives/purpose:** It is important to offer effective suicide risk assessments, interventions, and prevention strategies. But it does not mean to give every patient who expresses helplessness or suicidal ideation a one-way ticket to psychiatry or psychotherapy services. This case study will explore what needs to be concerned in words with suicidal ideation.

**Methodology or Methods:** The Brief Symptom Rating Scale was administered. There were 33 patients were referred to receive further suicide risk assessments during the study period. There were 19 patients with suicide ideation or behavior obviously observed before filling BSRS while there were 14 patients were answered with having suicide ideation. Interview data was analyzed by the content analysis method.

**Impact on practice or Results:** The referral numbers could be influenced by patients' and medical professionals' cultural values. The majority cancer type was head and neck cancers, all were with mild to moderately ideation degree without a partial or complete plan. Comparing BSRS with gender, the males were commonly disturbed by moderately to severe sleep problem while the females more express depressive mood. Analyzing all interview content about suicide, the predisposing factor was named "Lingering Pain result from Lost", the precipitating factor was named "Imprisoned body", and the perpetuating factor was named "Broken Self-Image".

**Discussion or Conclusions:** Reflecting personal or cultural values could be helpful for improving the detecting of suicide risk efficacy. The meaning under the words with suicide ideation is self-image within significant relationships with conflict or broken stories. In the future, it could explore the meaning in the condition of the BSRS with moderate or severe degree but without suicide ideation.

### **232 | Facilitating Intimacy and Connection in Men affected by Prostate Cancer as part of a Patient Empowerment Program**

*Gabriela Ilie, Robert Rutledge*

*Faculty of Medicine, Dalhousie University, Halifax, Canada*

**Background/rationale or Objectives/purpose:** Our online survey of 383 Canadian men with a diagnosis of prostate cancer (PC) showed over 70% of men identified sexuality/intimacy and relationship issues as a major concern. To address the high rates of mental distress in this population, we piloted a 28-day PC Patient Empowerment Program (PEP) which included intimacy teaching.

**Methodology or Methods:** PEP is a comprehensive program which includes daily physical exercise, meditation, pelvic floor exercises, and reminders emails and texts. The participants agreed to call two co-participants weekly. We sent the men a video every day which included encouragement, dietary tips, and intimacy / connection suggestions.

All 30 men with a history of PC in this study completed a comprehensive online survey of validated questionnaires prior to and after the 28-day program. Twenty-five men participated post-intervention focus groups.



**Impact on practice or Results:** Six of the 30 men screened positive for a mental health illness at baseline compared with 2 of 30 after 28 days ( $p = 0.031$ ). After the intervention men reported feeling less of a burden to others and more satisfied in their relationship ( $p$ )

**Discussion or Conclusions:** Prostate cancer survivors are open to suggestions about how to improve the depth and breadth of intimacy and connection in their lives and may actually benefit from the teaching. A randomized trial is justified to test this program.

## 226 | Is a stepped care approach to deliver cognitive-behavioural therapy for insomnia in cancer patients as effective than a standard face-to-face treatment?

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**Background/rationale or Objectives/purpose:** The efficacy of cognitive-behavioral therapy for insomnia (CBT-I) in cancer patients has been supported by several randomized controlled trials (RCT). However, its accessibility is very limited in routine cancer care. A stepped care approach beginning with a self-administered CBT-I, followed if needed by a more intensive treatment, has been recommended to increase patients' access to CBT-I. The goal of this non-inferiority RCT was to compare the efficacy of a stepped care approach to deliver CBT-I with that of standard PCBT-I.

**Methodology or Methods:** 177 cancer patients were randomized to: 1) standard CBT-I (6 face-to-face sessions;  $n = 59$ ) or stepped care CBT-I ( $n = 118$ ; 86.3% were women and 76.7% were breast cancer patients). In the stepped care group, patients with an Insomnia Severity Index (ISI) score of 8 or greater but lower than 15 first received a web-based CBT-I ( $n = 65$ ), while those with an ISI score of 15 or greater received 6 face-to-face CBT-I sessions ( $n = 53$ ). In both cases, patients could receive up to 3 booster sessions of CBT-I if they still had insomnia symptoms following this first treatment step (ISI score of 8 or greater).

**Impact on practice or Results:** Results indicated that the stepped care group had an ISI score reduction from pre- to post-treatment ( $-8.17 \pm 0.44$ ) that was not significantly inferior to that of the standard PCBT-I ( $-9.24 \pm 0.65$ ).

**Discussion or Conclusions:** This study indicates that a stepped care approach to deliver CBT-I is an effective alternative to standard face-to-face sessions. The next step is to implement this treatment in routine care.

## 155 | How a web-based financial resources navigation tool can help patients manage the financial toxicity of breast cancer

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**Background/rationale or Objectives/purpose:** A cancer diagnosis can have a significant impact on patients and families. A 2017 Canadian Breast Cancer Network survey[1] of 458 breast cancer patients in Canada shared that 47% of early stage patients, and 42% of metastatic patients experienced a negative impact on their finances as a result of their diagnosis. Of the respondents who looked for information about financial supports only 28% of early stage patients and 4% of metastatic patients were able to access all of the information they needed.

[1] CBCN; Breast Cancer: The Lived Experience: 2018 <https://cbcn.ca/en/the-lived-experience>

**Methodology or Methods:** An advisory board of breast cancer patients outlined the key financial concerns and informational gaps. CBCN

worked with a social worker who specializes in oncology to perform an environmental scan and identify what resources currently exist in Canada to support breast cancer patients from a financial perspective.

**Impact on practice or Results:** CBCN developed "FinancialNavigator", a digital web-based navigation tool that allows patients and health care professionals to access a comprehensive database of financial resources available to Canadians with breast cancer. While this resource was developed specifically for breast cancer patients, many resources identified in this database may also be useful for patients with other cancers. In addition, the resource supports patients and health care professionals in navigating the various health insurance systems in Canada.

**Discussion or Conclusions:** Patients and oncology health care professionals have access to a web-based tool that provides them with a user-friendly database of financial resources to support patients and families.

## 145 | Effects of a hypnosis-based intervention on fatigue and sleep difficulties in post-treatment cancer patients

*Charlotte Grégoire<sup>1</sup>, Marie-Elisabeth Faymonville<sup>1,2</sup>, Audrey Vanhauzenhuyse<sup>1,2</sup>, Vanessa Charland-Verville<sup>1,2</sup>, Guy Jerusalem<sup>1,2</sup>, Nadia Dardenne<sup>1</sup>, Isabelle Bragard<sup>1</sup>*

<sup>1</sup>University of Liège, Liège, Belgium; <sup>2</sup>University Hospital of Liège, Liège, Belgium

**Background/rationale or Objectives/purpose:** Fatigue and sleep difficulties are common symptoms reported by patients with cancer, even years after treatment completion. Hypnosis showed positive results on these negative consequences. However, hypnosis studies generally focused on breast cancer patients. The aim of our study is to test the impact of a group intervention combining self-hypnosis and self-care on post-treatment fatigue and sleep difficulties in patients with different types of cancer.

**Methodology or Methods:** In this unicenter, longitudinal randomized controlled trial, fatigue and sleep symptoms were assessed with different questionnaires (Multidimensional Fatigue Inventory, with 5 subscales: general fatigue, physical fatigue, mental fatigue, reduced motivation and reduced activity; Insomnia Severity Index), and the use of an actigraph (total sleep time and wake after sleep onset). Intervention impact was tested with repeated measures ANOVAs adjusted for age and diagnosis (breast vs other cancers).

**Impact on practice or Results:** 104 patients with cancer are included in our study. Until now, only baseline data were collected for all patients. T2 data will be available in July 2019. Repeated measures ANOVA will be conducted to assess the impact of the intervention on fatigue and sleep difficulties. We hypothesize that the experimental group will improve more on all the variables than the control group.

**Discussion or Conclusions:** The positive impact of this self-hypnosis/self-care intervention has been shown previously for breast cancer. If our results showed positive effects on sleep and fatigue in the experimental group, they will suggest that this intervention can be useful for other cancer populations as well.

## 121 | Living More Intimately: An experiential presentation teaching cancer survivors how to facilitate more connection and intimacy in their lives

*Rob Rutledge, Gabriela Ilie*  
Dalhousie University, Halifax, Canada

**Background/rationale or Objectives/purpose:** Feelings of disconnection and loneliness affect many people on the cancer journey. Even those who are in established relationships often will describe themselves as 'isolated'. People may not recognize the many way they connect with others nor that they can change their priorities to facilitate more meaningful relationships in their lives.

**Methodology or Methods:** This presentation teaches a simple and effective technique used at four day-long seminars for men and partners affected by prostate cancer and two young adult brain tumour survivor

weekend retreats. Participants were led through the following established steps in this intimacy exercise:

Expanding the definition of intimacy to include the dozens of ways we share of ourselves with others

Identifying the ways we most enjoy connecting with others

Quantifying our current intimacy/connection activity

Considering how we might spend more time and energy in nurturing our closest relationships

**Impact on practice or Results:** Feedback, completed by self-administered questionnaires, showed this intimacy exercise rated highly (greater than 9 out of 10 on a likert scale) in all six day-long or weekend programs with a total of over 100 participants. The verbal feedback during the sessions and evaluation form written comments included multiple positive insights generated from this exercise.

**Discussion or Conclusions:** Attendees at this presentation will learn the background and practical application they need to lead this group or individual exercise. This teaching technique is easy to employ, interesting to diverse audience members, and highly relevant to in the lives of people affect by cancer.

### 113 | Art, cancer and communication: an institutional and communal proposal

*Nancy Ferro, Sonia Checchia, Agustina Chacon*

*I.A.F., BUENOS AIRES, Argentina*

**Background/rationale or Objectives/purpose:** To analyse the phrases and comments that patients received from their family circle, physicians, social and working environment and from the media, which either obstruct or ease the active confrontation of the disease. The most representative sentences were captured by Milo Lockett in art works that were part of the exhibition Cancer, Art and Communication.

**Methodology or Methods:** Prospective study, descriptive, obtained through written questionnaires. Period 03/2017 – 04/2018.

**Inclusion criteria:** to be a patient from the institution with any oncological diagnosis and to agree to complete an anonymous questionnaire voluntarily.

**Impact on practice or Results:** 146 questionnaires assessed. Due to the fact that they were anonymous, it was not possible to analyse results according to age, sex or oncological diagnosis.

**Discussion or Conclusions:** The work's aim was to analyse the emotional impact of communication in the experience of getting ill with cancer in the non-medical environment with the help of art.

Fear of loneliness and need of family companionship; empathic communication with physicians, and more rigorous media treatment of cancer avoiding warlike and heroic metaphors have arisen as the needs in common among patients

### 76 | Autonomy and meaningfulness through creative intervention in end of life care

*Pauline Keena*

*Irish Nursing Board, Dublin, Ireland; University of Leeds Art School, Dublin, Ireland*

**Background/rationale or Objectives/purpose:** As an artist i am interested in looking at the human form in the circumstances of serious fatal illness. Through the lens of visual art practice I wanted to explore the world of the person who is dying and to bring physicalness, visibility and language to that process. In this work there is the opportunity to tell the personal story of illness so that there is a rewriting of the self beyond the medical model of diagnosis and treatment.

**Methodology or Methods:** I worked as an artist with a young woman who was terminally ill for a nine month period meeting once a week for a one hour period.

This collaboration offered the opportunity to engage with such artistic processes as drawing, painting, dialogue, narrative formation.

The relationship took place within agreed ethical parameters of best practice, permission, agreement, discussion, autonomy and confidentiality.

**Impact on practice or Results:** A structured programme of work emerged that can be available to others in similar circumstances so that the quality of their lives can be enhanced.

The work has been offered to clients at Arc House [a cancer support centre]in Dublin

over a four month period with very positive results

**Discussion or Conclusions:** There is the potential to develop a body of knowledge and work around the transformation of the experience of serious and terminal illness, shedding new light on our understanding of the matrix of illness.

There is the possibility to examine the ways in which artistic intervention can contribute to the management of illness in conjunction with more rigorous scientific methods.

### 39 | The Effect of Mindful and Educational Interventions on the Mindfulness, Self-Compassion, and Quality of Sleep for Family Caregivers of Patients with Cancer

*Latila Al-Daken<sup>1</sup>, Muayyad Ahmad<sup>2</sup>*

*<sup>1</sup>Zarqa University, Zarqa, Jordan; <sup>2</sup>University of Jordan, Amman, Jordan*

**Background/rationale or Objectives/purpose:** Family caregivers (FCs) living with the patient in the same house spend more time providing care, and assume more responsibilities for the patient, resulting in a higher level of physical, mental and emotional challenges. The purpose of this study was to examine the effects of brief Mindfulness-Based Interventions (MBIs) and Educational Intervention (EI) on enhancing mindfulness, self-compassion and quality of sleep for FCs' of patients with cancer in Jordan.

**Methodology or Methods:** A quasi-experimental, pre-test-post-test study was used. Two interventions were conducted, the first intervention is brief MBIs and the second intervention group attended an EI. The outcome variables were measured using: 1) the Arabic version of Mindful Attention Awareness Scale (MAAS); 2) the Arabic version of Self-Compassion Scale-Short Form (SCS-SF); 3) the Arabic version of Pittsburgh Sleep Quality Index (PSQI). All participants completed the measures in the pre-test and post-test time.

**Impact on practice or Results:** At the end of the interventions, the results of the paired samples t-test indicated that FCs in the mindfulness group demonstrated significant improvements in measures of mindfulness, self-compassion and quality of sleep with a medium to large effect size (Cohen d between 0.36 and 2.01, P

**Discussion or Conclusions:** The findings provide preliminary support for effectiveness of MBIs and EIs as a supportive care for FCs of patients with cancer. Oncology nurses should be encouraged to deliver tailored interventions to FCs of patients with cancer. This helps FCs to maintain an acceptable level of well-being to take care of their patients; which could reduce the demands for nursing home care.

### 38 | Enhancing Psychosocial Preparedness Of Colorectal Cancer Patients With Stoma: A Grounded Theory Of Preparedness Planning For Adults Recently Accepted Digestive Stoma

*Hui Yang, Rendi Tian*

*Cancer Hospital Affiliate to School Medicine, Sichuan Cancer Hospital, Chengdu, China*

**Background/rationale or Objectives/purpose:** Stoma creation often incurs various physical, mental, and social impairments and feelings of stigma. The preoperative period is characterized by fear, questioning and isolation. After surgery, colorectal cancer patients with stoma report reduced social activity, and higher depression and anxiety than colorectal cancer patients without stoma. The challenge is to find how

to help them to live with a stoma and cancer. To explore the experience, purpose and meaning of stoma to colorectal cancer patients recently accepted digestive stoma to make recommendations to enhance their psychosocial preparedness.

**Methodology or Methods:** Using constructivist grounded theory, data were collected in one to one interviews with eleven adults (four women and seven men aged 23–58 years). Data were analyzed using open and focused coding, constant comparison, theoretical coding, and this enabled construction of a subjective theory.

**Impact on practice or Results:** Colorectal cancer patients with stoma in this study interpreted stoma as an interruption to the events. Data analysis led to the construction of the theory, 'Enhancing Psychosocial Preparedness is very useful to get through the first month after they received colostomy'. This theory arose from three categories: fragility of self, maintaining self in an altered reality and mobilizing external resources. Preparedness planning could minimize the impact of stoma on them.

**Discussion or Conclusions:** These findings contribute to the understanding of colorectal cancer patients with stoma desired purpose of psychosocial preparedness planning. There are also implications for how psychological and social care professionals provide psychosocial preparedness planning to meet the needs of this population.

### 30 | "Pain is Our Common Language" Support group for Jewish and Bedouin mothers of children with cancer

*Bouthayna Alatawna, Tamar Niski Wagner*

*Soroka Medical Center, Beer Sheva, Israel*

**Background/rationale or Objectives/purpose:** The diagnosis of a malignant disease in a child is a family crisis. Parents are required to discover new ways of coping with an unfamiliar and threatening situation.

Participating in a Group therapy creates a support network for coping with cancer and contributes to the feeling of normalization and capability.

The Pediatric Hematology-Oncology Department at Soroka Hospital treats children with cancer from the Jewish and Bedouin sectors. The unique encounter between the two sectors requires the creation of creative, culturally adapted treatment solutions.

**Methodology or Methods:** The bilingual therapy group was developed as a unique intervention method where the discourse takes place in two languages - Arabic and Hebrew. The group's facilitation is conducted by a Hebrew-speaking social worker and an Arab-speaking social worker. All of the meetings incorporated artistic elements in order to enable free, unrestricted and spontaneous expression in a non-verbal manner.

The content provided to the group included information and tools from the multi-dimensional resilience model; psychological-educational information; and provided a space for venting and emotional support.

**Impact on practice or Results:** Many issues were raised, such as loneliness, pain, anxiety and guilt. A supportive, empowering, strengthening and inclusive atmosphere was created.

The participants noted the group's significance for them as a place that gives them strength and allows for emotional expression.

**Discussion or Conclusions:** Participation in the group contributed greatly to the wellbeing of mothers and to the individual therapy relationship between the mothers and the social workers.

Gaps in culture, language and religion were bridged by coping with a child with cancer.

### 29 | Preliminary Findings of the Efficacy of a Stepped Collaborative Care Intervention for Patients Diagnosed with Comorbid Cancer and Depression

*Jennifer Steel<sup>1</sup>, Geena Richards<sup>1</sup>, Jessica Miceli<sup>1</sup>, Carol Lynn Hecht<sup>1</sup>,*

*Joshua Lee<sup>1</sup>, Michael Antoni<sup>2</sup>, Shaymal Peddada<sup>1</sup>, Carly Flaig<sup>1</sup>,*

*Donna Olejniczak<sup>1</sup>, Qi Chen<sup>1</sup>, David Geller<sup>1</sup>*

<sup>1</sup>University of Pittsburgh, Pittsburgh, USA; <sup>2</sup>University of Miami, Miami, USA

**Background/rationale or Objectives/purpose:** The aims of this study were to share the interim analyses examining the efficacy of a stepped collaborative care intervention for patients diagnosed with cancer.

**Methodology or Methods:** Patients were screened for clinical levels of depressive symptoms, pain, and fatigue and were enrolled in the study. Patients completed a battery of instruments prior to randomization to the stepped collaborative care intervention or the screening and referral arm. Patients were assessed for post-treatment outcomes at 6- and 12-months follow-up.

**Impact on practice or Results:** Of the first 100 patients enrolled in the study, the mean age was 64.0 years (SD = 10.3), the majority were male (51%), Caucasian (89%), and diagnosed with liver cancer (47%) and stage III or IV cancer (60%). Patients randomized to the stepped collaborative care intervention reported significant reductions in depressive symptoms ( $F(1,92) = 6.22, p = 0.014$ ; Cohen's  $d = 0.547$ ) and improvements in quality of life ( $F(1,92) = 7.36, p = 0.008$ ; Cohen's  $d = 0.652$ ) with moderate effect sizes. The mean change in depressive symptoms from randomization to 6-month post-treatment was -4.3 (S.D. = 9.7) for the patients randomized to the collaborative care intervention and +0.71 (S.D. = 9.4) for patients randomized to the screening and referral arm. The mean change in quality of life from randomization to 6-months post-treatment was +4.5 (S.D. = 16.2) for the patients randomized to the collaborative care intervention and -4.4 (S.D. = 15.2) for the patients randomized to the screening and referral arm.

**Discussion or Conclusions:** This promising evidence-based, scalable intervention was shown to be effective in reducing depressive symptoms and improving quality of life.

### 22 | A Pilot Study of the Effectiveness of an 8 Weeks Cognitive Behavioural Therapy on Cancer Related Fatigue, Anxiety and Depression, among Nigerian Breast Cancer Patients

*Maria Chidi Christiana Onyedibe, Mike Chuka Ifeagwazi*

*University of Nigeria, Nsukka, Nigeria*

**Background/rationale or Objectives/purpose:** Cancer-related fatigue (CRF), anxiety and depression are the most significant clinical and psychopathological problems experienced by breast cancer patients and results in reduced quality of life and higher mortality rate. Although, cognitive behavioural therapy (CBT) had been shown to significantly reduce CRF, anxiety and depression among breast cancer women in Western countries, less is known about its efficacy in a developing country like Nigeria. The study objective is to test the effectiveness of a group CBT on CRF, anxiety, and depression among Nigerian women with breast cancer.

**Methodology or Methods:** 15 breast cancer women were allocated randomly to group CBT (N = 7) or to a waiting list condition (8). While both groups received their standard oncology care, the treatment group received an 8 week, 90 min session of CBT. Assessments were carried out at baseline and 6 months. The primary outcome variables were Multidimensional Fatigue Inventory (MFI) and Hospital Anxiety Depression Scale (HADS). Data were analysed with Independent Samples T test.

**Impact on practice or Results:** Participants in the CBT had significant lower scores in the five dimensions of MFI (general, physical, and mental fatigue, reduced activity and motivation), depression and anxiety compared to control groups. Within the treatment group, there was a significant difference in Pre and Post intervention for both MFI and HADS.

**Discussion or Conclusions:** This preliminary study demonstrate that group CBT is effective in reducing significantly the impact of CRF, anxiety and depression on Nigerian breast cancer patients. The CBT represents an excellent complement to other oncology care and should be included as an essential part of palliative care in Nigeria.



## R. SELF-CARE FOR THE CLINICIAN

**682 | Building Resilience in Oncology Health Care Providers: An Online Course on Managing Grief and Loss**

*Mary Jane Esplen<sup>1,2</sup>, Mary Vachon<sup>1</sup>, Yvonne Leung<sup>1,2</sup>, Jiahui Wong<sup>1,2</sup>, Allan Holtzman<sup>2</sup>, Sarah Bakirci<sup>3</sup>*

<sup>1</sup>University of Toronto, Toronto, Canada; <sup>2</sup>de Souza Institute University Health Network, Toronto, Canada; <sup>3</sup>McGill University, Montreal, Canada

**Background/rationale or Objectives/purpose:** Grief and loss are inevitably faced by healthcare professionals (HCP). Repeated exposure can result in HCP experiencing burnout, vicarious trauma and worsened health, as well as contribute to decreased quality of patient care. de Souza Institute provides an e-learning intervention helping HCP to recognize impacts of loss and grief, assesses personal and environmental risk factors, and applies strategies to facilitate resilience and coping. Study objectives were to assess learners' grief level, confidence in dealing with loss and program satisfaction.

**Methodology or Methods:** 11 offerings of a 6-week online educational program occurred between 2011–2018. Participants attended six 1.5-hour videoconference-based sessions led by experts in grief-counseling, participated in discussions, and presented a difficult case-study to illuminate learning. Grief was assessed by Revised Grief Experience Inventory (RGEI) pre-program, confidence in managing loss was assessed pre- and post-program, and satisfaction post-program. Descriptive statistics and paired t-tests were conducted.

**Impact on practice or Results:** 189 HCP were enrolled. Majority were nurses (84%), female (96%), aged 30–49 years (51%) with median years of practice of 15 years, working in oncology (34%), palliative care (32%), and in rural settings (43.5%). 76% reported recent loss, 39% experienced 10–29 patient deaths/year, and 26% had seen a therapist. Baseline mean RGEI total was 60.6 (SD = 25.1; 26% > norm). 183 (97%) reported significant increase of confidence in managing grief and loss ( $t = 16.5$ ,  $p < .0001$ ) post program. Participants valued the dynamic group discussions, tools and story sharing.

**Discussion or Conclusions:** Up to 26% of HCP experience high levels of grief. An online educational intervention significantly improved HCP confidence in managing grief and loss.

**533 | Between empathy and grief: The mediating effect of secondary traumatic stress among oncologists**

*Gal Hayuni<sup>1</sup>, Ilanit Hasson-Ohayon<sup>2</sup>, Gili Goldzweig<sup>1</sup>, Michal Braun<sup>1</sup>*

<sup>1</sup>The Academic College of Tel Aviv-Yaffo, Tel Aviv, Israel; <sup>2</sup>Bar-Ilan University, Ramat Gan, Israel

**Background/rationale or Objectives/purpose:** Oncologists as part of their work are exposed to suffering, loss and death. This exposure can eventually lead to grief reactions. Grief over patients might be a result of close, meaningful and empathic oncologist-patient relationships. Empathy might put oncologists at risk for compassion fatigue. This study examined the mediating role of compassion fatigue components (secondary traumatic stress and burnout) in the relation between empathy and grief among oncologists.

**Methodology or Methods:** Participants included 71 Israeli oncologists. Measures: Demographic Questionnaire, the Texas Revised Inventory of Grief, the Interpersonal Reactivity Index, and the Professional Quality of Life including sub-scales of Compassion Satisfaction and Compassion fatigue

**Impact on practice or Results:** Oncologists reported moderate levels of grief, and relatively high levels of both dimensions of compassion fatigue: secondary traumatic stress and burnout. In addition, they reported high levels of the three components of empathy: perspective taking, empathic concern and personal distress. The results supported the mediation hypothesis. The mediators (secondary traumatic stress and burnout)

fully accounted for the relationship between empathy components of perspective taking, personal distress and grief.

**Discussion or Conclusions:** This study supports the claim that grief over patients is a common experience for oncologists. We found that oncologists' grief was related to their empathy and these associations were explained by their levels of secondary traumatic stress. This research may be a step toward recognizing oncologists' grief and understanding the processes associated with it.

**299 | Grief Over Patients, Compassion Fatigue and the Role of Social Acknowledgment among Psycho-oncologists**

*Michal Braun<sup>1,2</sup>, Adi Engler-Gross<sup>1</sup>, Rony Laor-Maanyan<sup>1</sup>, Gil Goldzweig<sup>1</sup>, Ilanit Hasson-Ohayon<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** Patients' loss is part of psycho-oncologists' work of psycho-oncologists and may cause grief reactions. We examined whether grief might be associated with compassion fatigue which composed by secondary traumatic stress and burnout, among psycho-oncologists. While burnout is usually related to work environment, secondary traumatic stress develops in response to exposure to patients' traumatic events and expressed in reduced empathy to others' suffering.

In addition, due to the professional nature of the relationship, we hypothesized that psycho-oncologists might experience their grief over patients as socially invalid and that social acknowledgment might play a role as a moderator in the association between grief and compassion fatigue.

**Methodology or Methods:** Sixty psycho-oncologists were recruited and completed informed consent and self-administered questionnaires examining grief, compassion fatigue and social acknowledgment.

**Impact on practice or Results:** The participants reported moderate to high levels of grief and high levels of compassion fatigue. Grief and compassion fatigue (secondary traumatic stress and burnout) were significantly positively associated. K-means Cluster analysis based on social acknowledgment and grief yielded 3 clusters: High Grief-Low Social Acknowledgment, Medium Grief-High Social Acknowledgment and Low Grief-Medium Social Acknowledgment. A significant difference between the groups was found in secondary traumatic stress. Levels of secondary traumatic stress in the High Grief-Low Social Acknowledgment cluster were significantly higher in comparison to each of the other clusters.

**Discussion or Conclusions:** Psycho-oncologists experience loss of patients as part of their work and develop grief in response. When this grief is perceived as socially invalid, results in high levels of compassion fatigue: a phenomenon with undesirable personal and professional implications.

**196 | Decisional Conflict of physicians during the decision-making process for a simulated advanced-stage cancer patient: An international longitudinal study with German and Belgian physicians**

*Alexander Wuensch<sup>1,2</sup>, Catharina Schoenfeld<sup>2</sup>, Yves Libert<sup>3</sup>, Heribert Sattel<sup>4</sup>, Delphine Canivet<sup>3</sup>, France Delevallez<sup>3</sup>, Andreas Dinkel<sup>4</sup>, Pascal O. Berberat<sup>2</sup>, Darius Razavi<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** Decision making with advanced cancer patients is often associated with decisional conflict regarding treatment outcomes. This longitudinal multicenter study investigated

German physicians' course of decisional conflict during the decision-making process for a Simulated advanced-stage cancer Patient (SP). Results were compared to a matched sample of Belgian physicians.

**Methodology or Methods:** German physicians' ( $n = 30$ ) decisional conflict was assessed with the Decisional Conflict Scale (DCS) at baseline ( $t_1$ ) and after the four steps of a decision-making process: after reviewing the SP chart ( $t_2$ ), after viewing an assessment video interview with the SP ( $t_3$ ), after reviewing the team recommendations ( $t_4$ ), and after conducting the patient-physician decision-making interview ( $t_5$ ). The results were compared to those of a Belgian matched sample ( $n = 30$ ).

**Impact on practice or Results:** Decisional conflict of German physicians decreased during the Decision-Making process ( $M = 53.5$ ,  $SD = 11.6$  at  $t_2$  to  $M = 37.8$ ,  $SD = 9.6$  at  $t_5$ ,  $p37.5$ ).

**Discussion or Conclusions:** Physicians' decisional conflict decreases during the decision-making process, though it remains at a high level. Culture and different health care systems have no influence on this process. The results emphasize the influence of psychosocial factors. We conclude that this issue should be considered more intensively in future research and in clinical care.

## 150 | SNOcares: Addressing Burnout in Neuro-Oncology Professionals Through Awareness & Education

*Alvina A. Acquaye<sup>1</sup>, Elizabeth Vera<sup>1</sup>, Barbara O'Brien<sup>2</sup>, Shlomit Yust-Katz<sup>3</sup>, Monica Venere<sup>4</sup>, Milan G. Chheda<sup>5</sup>, Eudocia Lee<sup>6</sup>, Terri S. Armstrong<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Cancer care providers are not immune to experiencing burnout. Multiple demands limiting dedication to meaningful tasks, burden of administrative responsibilities, and lack of clinical/administrative support confirm a growing list of stressors impacting job satisfaction. The purpose of this study is to report the incidence of burnout in Society of Neuro-Oncology (SNO) members and describe the creation of a program addressing self-care and positive coping.

**Methodology or Methods:** The Neuro-Oncology Career Satisfaction and Burnout survey was completed by SNO members, including: physicians ( $n = 252$ ), allied health professionals ( $n = 53$ ), and basic scientists ( $n = 29$ ) who completed the Maslach Burnout Inventory-Health Services (22-item questionnaire) via a web-based portal. Results led to development of an organizational program described below.

**Impact on practice or Results:** High burnout was found in 63% of HCPs. The top 3 profiles specifying how burnout is experienced included: 2 negative (Overextended (30%), Ineffective (21%)) and a positive (Engaged (29%)). Recognition of the implications of burnout from the survey led to the newly created SNO Wellness Committee and an initiative (SNOcares) with the mission to reduce burnout and foster self-care through awareness, to identify early warning signs, and to improve work/life balance through educational initiatives at the annual meeting. Activities included increasing mind-body awareness (yoga, massages, wellness pop-up), communication (Twitter takeover), and resources (tip cards) for management of stress-related symptoms. Assessment of member burnout will continue; most recently, a survey was initiated for young professionals.

**Discussion or Conclusions:** SNOcares created a platform to raise awareness and future directions will identify the impact of programs on stress-related symptoms and self-reported burnout among members.

## 141 | Caring for the Caring Professionals within a Cancer Hospital: Research into Compassion Fatigue, Burnout and Distress in the Workplace

*Julia Drake, Noelle Gallant, Emma Sturgess, Melissa Walker*  
Calvary Mater Hospital, Newcastle, Australia

**Background/rationale or Objectives/purpose:** Care provided to people approaching the end of their life has become an area of importance in the acute hospital system, however little research has explored the impact on broad hospital staff who interact with these patients and their families on a day-to-day basis.

**Methodology or Methods:** As part of a needs assessment regarding the resources and service development required to support all hospital staff who regularly work with people who are dying, members of the Social Work Department at the Calvary Mater Newcastle hospital completed preliminary research involving a whole of hospital questionnaire. 162 participants completed a qualitative questionnaire that covered the impact of caring for patients at end of life and the strategies used to manage this impact.

**Impact on practice or Results:** The key finding was that participants reported that supporting people at the end of their life impacts on their wellbeing, confirming a need for the hospital to further develop multi-faceted support structures to support all staff.

**Discussion or Conclusions:** Due to only a small response rate, further research is needed. This will allow us to further assess the impact on staff and develop a greater understanding of current support structures and what gaps may exist.

To support us in this process, we are seeking feedback on:

How could we engage staff who didn't participate in the questionnaire?

How could we measure if burnout and compassion fatigue has a significant cost to the organisation?

Who could we collaborate with on this work nationally or internationally?

## 89 | Resiliency and Self-Care for People Working in Psychosocial Oncology

*Elaine Shearer*

BC Cancer, Vancouver, Canada

**Background/rationale or Objectives/purpose:** Working in oncology is inherently emotionally intense (Rohan, 2009) and 40–85% of helping professionals who work closely with clients who are experiencing trauma have experienced compassion fatigue or high levels of traumatic stress symptoms (Mathieu 2012). Self-care and resiliency was identified as an educational need in response to informal requests from front line staff in the Patient and Family Counselling teams at BC Cancer who were experiencing symptoms of burn-out.

**Methodology or Methods:** The course uses adult education principles of building on what participants already know. It describes a spectrum of credible stress management interventions and encourages learners to reflect on how they could be applied to themselves related to their work life in an oncology setting. It validates the likelihood to people working closely with patients at some time dealing with compassion fatigue. The course offers a number of personal and team strategies to support the skills and awareness to maintain long, fulfilling careers in this field.

**Impact on practice or Results:** Since interpersonal skills are key to the work of psychosocial oncology, staff having resources that they can use and revisit promotes their ongoing resilience and self-care. Staff awareness of the dangers of work place stress, contributes to a healthy culture that models and promotes wellness strategies.

**Discussion or Conclusions:** To date, 74 people have taken the course and feedback is extremely positive. Colleagues in the community have requested to have access to the course. One issue we identified was that participants skimmed over the online reflection exercises because of not wanting to take the time.

## 62 | Association between work stress and coping strategies among nurses engaged in palliative care in general wards

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**Background/rationale or Objectives/purpose:** Nurses engaged in palliative care on general wards experience a significant amount of work stress as they provide nursing care to patients in various stages of diseases in the same environment. We examined the association between work stress and coping strategies among nurses engaged in palliative care in general wards to obtain suggestions for developing strategies to reduce such stress.

**Methodology or Methods:** A questionnaire survey was conducted on nurses engaged in palliative care in general wards. Work stress was measured using a scale developed in-house (6 factors, 29 items), and coping strategies were measured using the coping inventory for stressful situations. The correlation between work stress and coping strategies was analyzed.

**Impact on practice or Results:** In total, 214 nurses participated, and 86 provided valid responses. Task-oriented coping was positively correlated with stress associated with differences in the perspectives on care among the team members as well as the lack of competency among themselves and the nursing team. Avoidance-oriented coping was positively correlated with stress associated with rejection of care by patients and their families as well as the lack of adequate nursing management systems in the workplace. Emotion-oriented coping was positively correlated with all factors of work stress.

**Discussion or Conclusions:** The type of work stress varies for different coping strategies, and emotional coping strategies elicit multifaceted stress responses. These findings suggest that it is important for nurses to learn several types of coping strategies to minimize work stress, and have an environment that promotes learning so they can perform self-education.

### 33 | Empathy without Empathic Exhaustion

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**Background/rationale or Objectives/purpose:** Empathy is an important resource for health care professionals. However, its frequent application increases compassion fatigue, manifested in burnout, and work impairment. The need to reduce compassion fatigue has become a major goal for those concerned with taking care of the caretakers. The approach based on reducing empathy is inadequate for patients and caretakers. The objective was to examine the utility of specific psychological tools for enabling the manifestation of empathy without empathic exhaustion.

**Methodology or Methods:** The tools were developed in the framework of the cognitive orientation theory that specifies conditions of the motivational disposition for behaviors, and the theory of meaning that deals with the cognitive networks underlying emotional performance.

The tools for reducing empathy exhaustion are creating a motivational disposition supporting “bounded empathy” and a mental set for regulating emotional reactions. Assessment instruments were the Compassion Fatigue Scale- revised (Gentry et al, 2002), and the cognitive orientation scale for bounded empathy (Kreitler, 2018).

10 trained psychology students were trained with the tools for one week and 9 others were not. All practiced regular psychotherapeutic support in a pediatric oncology ward for 8 weeks.

**Impact on practice or Results:** Comparing the results before and after the training showed significant improvements in the students who underwent the training.

**Discussion or Conclusions:** The demonstration shows that the suggested procedure provides the caretaker useful tools for controlling one's empathic responses while avoiding empathic fatigue. Future development

focuses on devising an application for enabling the caretaker to apply the procedure at will on his or her own.

## S. SURVIVORSHIP

### 720 | Cognitive functions and emotional distress in young adults (YA) with cancer: a prospective study

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*David Hodgson<sup>1</sup>, Philippe Bedard<sup>1</sup>, Gerald Batist<sup>3</sup>, Petr Kavan<sup>3</sup>,*

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**Background/rationale or Objectives/purpose:** Cancer has been linked with neurocognitive sequelae in older adults; whether YA (age 18–39) are at risk is unknown. This study characterizes neurocognitive functions and emotional distress in YA with cancer.

**Methodology or Methods:** Newly-diagnosed YA with non-CNS cancer (n = 107; lymphoma, breast, testicular, other) completed a 2 h battery of standardized tests and questionnaires prior to chemotherapy for those requiring it (YAC<sup>+</sup>; n = 69), and 6 and 12 months later. Healthy YA with no cancer history (HYA; n = 63) were tested at similar time points.

**Impact on practice or Results:** At baseline, there were no group differences in patient-reported cognitive symptoms, objective measures of performance, or number of impaired tests (Kruskal Wallis, all p-values > .4). Patient-reported cognitive symptoms did not change over time, but performance improved for all groups, regardless of whether they had cancer or received chemotherapy (random effects models, all p-values < .01). There were also no group differences in frequency of cognitive decline on individual tests (standardized regression-based change scores). YAC<sup>+</sup> reported greater emotional distress and a greater proportion had scores above clinical cutoffs at all three times, compared to the other two groups. Although YAC who did not require chemotherapy reported elevated distress at baseline and 6 months, by 12 months their symptoms declined and were similar to HYA.

**Discussion or Conclusions:** Cognition in YAC was not different from healthy YA and did not decline over time, consistent with research suggesting that younger brains are less vulnerable to neurotoxic insult. Whether neurocognitive effects of cancer treatment emerge later in YAC, placing them at risk for accelerated aging, remains to be examined.

### 696 | Family Matters: The Role of Family Factors on Social Withdrawal in Survivors of Pediatric Brain Tumor

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**Background/rationale or Objectives/purpose:** Survivors of pediatric brain tumor (PBT) often live with debilitating late effects of treatment including social adjustment deficits. Survivors of PBT are less likely to be married and employed compared to siblings. This study aims to explore social adjustment in survivors compared to controls and to investigate the role of family factors on social adjustment deficits in survivors.

**Methodology or Methods:** Participants included 17 survivors of PBT (mean age = 12.71 years [SD = 3.50], 41.2% male) and 23 healthy controls



(mean age = 11.35 years [SD = 3.04], 52.2% male). Social adjustment was assessed through parent-proxy report of withdrawal symptoms (Behavioral Assessment System for Children [BASC-3]). Family social environment was categorized using standardized scores from the Family Environment Scale. These, along with clinical and demographic variables were used to identify predictors of social withdrawal.

**Impact on practice or Results:** Compared to healthy controls, survivors were more withdrawn ( $60.35 \pm 16.56$  vs  $47.26 \pm 7.96$ ;  $p = 0.002$ ). Across the sample, decreased withdrawal was predicted by group membership and family factors ( $R^2 = 0.55$ ,  $F(2,33)$ ,  $p = 0.050$ ). Specifically, main effects of group membership ( $\beta = -12.19$ ,  $p = 0.04$ ), emphasis on recreational activities ( $\beta = -0.42$ ,  $p = 0.031$ ) and moral/religious activities and values ( $\beta = -0.35$ ,  $p = 0.016$ ) predicted lower social withdrawal. There was a significant interaction for group-moral/religious activity ( $\beta = -0.64$ ,  $p = 0.028$ ). Demographic factors were not predictive of social withdrawal.

**Discussion or Conclusions:** Social adjustment deficits experienced by PBT may be mitigated by family factors. The protective role of family factors, specifically moral/religious activity should be investigated further with an aim to develop targeted interventions designed to improve quality of life and social attainment.

### 685 | Why Curing Cancer is not Enough – The conversations we're not having

*Christopher Lloyd*

*Oneball Charitable Cancer Organization, Calgary, Canada*

**Background/rationale or Objectives/purpose:** Testicular cancer is the number one cancer for men aged 15–35, 57% of which don't know they are at risk. Men in this demographic often struggle with two things in particular; taking care of themselves and asking for help. As a result, many men suffer in silence. Oneball's Mission is to provide meaningful assistance throughout the testicular cancer journey and to destroy the stigma around talking about men's health, one ball at a time.

**Methodology or Methods:** Oneball is ballsy. We use humor and fun events to help men open up, but we're not just fun and games. We fund life changing research, help pay the various expenses not covered by our public healthcare, and provide critical information in a relatable way – like talking to a friend.

**Impact on practice or Results:** Having raised over \$300,000 for testicular cancer, it is how we do our work that makes Oneball unique. We've funded the establishment of a testicular cancer database, are making investments in studying the emotional and psychological impacts of cancer, and provided over \$35,000 in financial assistance to patients. These accomplishments, combined with our humorous and lighthearted events and awareness campaigns, have been recognized with innovation awards from the Calgary Chamber of Volunteer Organizations (2017) and the Calgary Stampede (2017).

**Discussion or Conclusions:** Oneball views cancer not just as a disease, but as a journey. We need to give young survivors the tools to navigate their own unique journey far beyond the disease itself. Curing cancer is not enough, and we believe our approach makes a difference.

### 672 | Patient Competencies – Do Palliative Treatment Intention and Time since Diagnosis Make a Difference?

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**Background/rationale or Objectives/purpose:** Germany's National Cancer Plan designates promoting Patient Competence (PC) as one of its goals, while acknowledging a considerable need of clarifying this

concept itself and identifying potential determinants and health-related outcomes. Against this background, we explored potential effects of palliative treatment and time since diagnosis (TSD) on PC.

**Methodology or Methods:** In a study with three measurement points, we included 424 patients with breast, colorectal or prostate cancer in either oncological rehabilitation or out-patient treatment (mean age 61.5 years, 53% female, 34% under palliative treatment, median TSD 9.2 months). At each time point, PC was measured with the Patient Competence Questionnaire 57 (PCQ-57) that includes 8 distinct scales (Giesler & Weis 2008). To test for effects of treatment intention and TSD, we computed 2 (curative vs. palliative) x 2 (TSD below median vs. TSD above median) ANOVAs on PC, coping self-efficacy (CBI-B) and quality of life (QLQ-C30) measured at baseline.

**Impact on practice or Results:** Compared to patients under curative treatment, patients under palliative treatment reported dealing explicitly with the life-threat posed by cancer to a significantly larger extent. Also, they reported significantly lower coping self-efficacy and physical functioning. Longer TSD was associated with significantly stronger competencies for seeking information, striving for autonomous decisions, using social benefits and better role functioning. Effect sizes were generally small, however.

**Discussion or Conclusions:** The findings suggest that a palliative situation and longer TSD may independently impact on PC, coping self-efficacy and quality of life. They thus underline the need for supporting patients in these situations in their striving for autonomy and their coping efforts.

### 669 | Confirmatory Factor Analyses of the Patient Competence Questionnaire 57 in a Sample of Colorectal Cancer Patients

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**Background/rationale or Objectives/purpose:** Patient competence (PC) may be defined as a patient's ability to deal with tasks and distress arising from cancer and its treatment (Giesler & Weis 2008). As a measure of PC, the Patient Competence Questionnaire 57 (PCQ-57) has been proposed. It is unclear, however, whether its factor structure will replicate in homogenous samples of specific diagnostic entities. The present analysis addresses this question for a sample of colorectal cancer patients participating in an RCT on the effects of a website providing patient narratives on living with colorectal cancer (Giesler et al. 2017).

**Methodology or Methods:** The study included 212 colorectal cancer patients (median age 54 years, 59% female). We performed confirmatory factor analyses (CFAs) of the PCQ-57 items measured at baseline. Since the PCQ-57 addresses problem- and emotion-focused competencies under different instructions, separate CFAs were conducted for these competencies.

**Impact on practice or Results:** CFAs of the problem-focused competencies identified 6 (instead of 5) factors (CFI = .944, RMSEA = .051) covering, e.g., seeking information, assertively interacting with physicians and self-regulation. For emotion-focused competencies only 2 (instead of 3) factors were identified (CFI = .973, RMSEA = .065) covering distress management and dealing with threat explicitly. Scales built on this basis were internally consistent and correlated substantially with self-efficacy and depression ( $r$ 's  $\geq .135$ ).

**Discussion or Conclusions:** The CFAs confirm the PCQ-57 factor structure in colorectal cancer patients with two exceptions and they help identify items with insufficient indicator reliabilities. Thus, modifications on the item level appear necessary to further assure the utility of the instrument in research and clinical practice.

### 667 | Examining the Most Frequently Reported Health Problems in Survivors of Childhood Cancer

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**Background/rationale or Objectives/purpose:** The five-year survival rate of survivors of childhood cancer (SCC) is over 80%. Given an exponentially growing population, greater focus on understanding health issues that impact survivors' daily living is needed. The present study aimed to: 1) identify the most common health problems reported by SCC at the Alberta Children's Hospital Long-Term Survivors Clinic (LTSC); and 2) determine if the most common problems remain stable over time.

**Methodology or Methods:** Survivors reported physical and psychosocial health concerns via a comprehensive questionnaire at regular clinic visits. Data from survivors who attended the LTSC between October 2016 and December 2017 were included in analyses. Patient demographics and their most frequently reported health problems were assessed. Secondary analyses examined the frequency of reported health problems from the same group of survivors between 2015-2016.

**Impact on practice or Results:** Data from 287 survivors (51% males; mean age = 19.3 years [SD = 6.8], mean time off treatment = 11.27 years [SD = 5.35]) were analyzed. The most common diagnosis was Acute Lymphoblastic Leukemia (36.6%). The most frequently reported health problems were "frequently tired" (20.5%), "back pain" (15.3%) and "frequent headaches" (15.1%). These remained the top three problems across 2015-2016.

**Discussion or Conclusions:** Given the frequency and consistency of reports of fatigue, back pain, and headaches by survivors, more attention to these symptoms at LTSC appointments may be warranted, as these reports appear to be higher than the general population. Future research will aim to discern the characteristics of survivors who are more likely to report such issues. Ultimately, interventions to support survivors to alleviate these symptoms may be needed.

### 663 | The Living with Leg Lymphedema Study: Exploring the Quality of Life and Disease Education of Individuals Experiencing Cancer-Related Leg Lymphedema

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**Background/rationale or Objectives/purpose:** In North America, lymphedema is most commonly caused by cancer therapies that damage the lymphatic system. Consequently, patients experience chronic discomfort, physical debilitation, and diminished quality of life (QOL). This study aimed to evaluate the impact of lymphedema on QOL of cancer-related, lower-extremity lymphedema (LEL) patients and explore healthcare provider perspectives on LEL. The objectives were to: 1) assess patients' QOL and lymphedema knowledge; 2) evaluate the impact of previous and current management strategies; 3) assess patient interest in additional treatments, and 4) explore healthcare provider lymphedema knowledge, referral practices, and suggested interventions to improve care.

**Methodology or Methods:** The study design incorporates mixed-methods. Self-report questionnaires and semi-structured interviews were administered to triangulate perspectives from both groups. Participants (n = 33) included:

Patients with a diagnosis of cancer-related LEL. Those experiencing cancer or undergoing active treatment were excluded.

Physicians and nurses working with patients at-risk for cancer-related LEL were included. Participants required the ability to refer or aid in the referral of patients to lymphedema clinics.

**Impact on practice or Results:** Preliminary findings demonstrate the lymphedema patients experienced higher levels of anxiety and depression relative to published norms for cancer survivors. Relative to other LEL populations, however, participants reported higher QOL scores overall. Preliminary analyses of healthcare provider interviews indicated respondents were able to recognize clinical presentation of lymphedema and refer symptomatic patients to local lymphedema clinics.

**Discussion or Conclusions:** Increased patient well-being of our participants may be related to the continued involvement of oncology personnel in maintaining long-term patient QOL beyond active cancer treatment.

### 648 | Treatment-related problems and fear of cancer recurrence (FCR) in breast cancer survivors (BCS)

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**Background/rationale or Objectives/purpose:** FCR is the main psychological consequence in BCS. Objectives: 1) To ascertain figures in our country 2) To see if treatment related problems influence in FCR level 3) To find out what word BCS prefer to call themselves

**Methodology or Methods:** Methods: we launched a questionnaire including main treatment related problems and a 0 to 10 Likert scale to see level of worry, and HAD scale

**Impact on practice or Results:** 110 BCS (6 months to 16 years). Mean age: 54 (Sd = 10,7), 71% married; 74% children; 53% high academic level; 44% working; Mastectomy: 51%. 80% have FCR, specially when they have a control. FCR was rated mean 6. Neuropsychological problems, 51% memory; 46% concentrating (rated 7), only 17% receive advice about it. Physical problems: 22% lymphedema, 19% received advice about it. 69% experienced fatigue. 73% explained it to doctor, 19% received advice (6,5 worry). Work-related problems: 40% had problems, 30% didn't talk about to workmates. Family-social support: 20% felt alone when diagnosis, 35% family relationship had changed. 80% felt support from family. 64% felt support from couple, 57% impairment in sex, mainly due to lost of sexual drive (worries about: 6). Social changes 70% explained illness to friends, 24% changes in friendship. 30% feel that friends treat them differently. 40% needed psychological advice, 89% received it. Post-traumatic growth: 66% told cancer is a positive experience. 55% feel cured. The preferred word: 33% survivor, 22% Person with cancer, 13% patient, 6% victim (all mastectomized), 20% no one. Mean anxiety 7,22; Depression 6,22, both related significantly with FCR level. No significant relation between preferred word and level of anxiety or depression, but with FCR level. FCR was different only by work-related problems. Multiple regression equation: only anxiety predicts FCR.

**Discussion or Conclusions:** FCR is not related to treatment consequences, but to worry about them, so psychological intervention may be used to treat it.

### 644 | Exploring the experience of positive body image among breast cancer survivors: An interview study

*Maia Thornton, Helena Lewis-Smith*

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**Background/rationale or Objectives/purpose:** Existing research has identified the high prevalence of body image concerns among female breast cancer survivors. However, it has neglected to explore the experience of positive body image among this group, despite its potential utility for intervention development. The present study therefore aimed to explore the experiences of breast cancer survivors who self-identified as experiencing a positive relationship with their post-treatment bodies.

**Methodology or Methods:** Twenty-two women (M age = 54 years; M time since active treatment = 49 months; 82% had undergone mastectomy) in the United Kingdom were interviewed using a semi-structured design. Thematic analysis was employed to analyse the transcripts.

**Impact on practice or Results:** Thematic analysis revealed three themes: 1) managing appearance ideals, 2) receiving care, and 3) self-value beyond appearance. Findings indicated that due to their life experiences, women had developed a critical awareness of the unrealistic nature of appearance ideals. Their experience of positive body image was also attributed to engaging in self-care and receiving supportive care from others. Women also expressed that their physical appearance did not represent the most important aspect of their bodies, instead prioritising functionality and health.

**Discussion or Conclusions:** The present findings advance our understanding of body image among breast cancer survivors, and have theoretical, practical, and research implications. The suggested psychosocial influences on positive body image warrant quantitative exploration, and may constitute targets for a future intervention to promote positive body image among this group.

#### **640 | Sociocultural and psychological factors that influence body appreciation among breast cancer survivors: Evaluation of a moderated mediation model**

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**Background/rationale or Objectives/purpose:** Research has recognised the adverse and long-lasting impacts of breast cancer treatment on women's body image. However, it has neglected to examine positive body image and its influences among this group, despite its potential utility for intervention development. The aims of the study were to: (a) test the 'Tripartite Influence Model', which postulates that body image is shaped by three sociocultural influences (media, family and peers); through mediating psychological processes of internalisation of appearance ideals and appearance comparisons, and to (b) examine whether the model is moderated by self-compassion and appearance investment.

**Methodology or Methods:** 169 women with a history of breast cancer (M age = 49.9 years) completed an online questionnaire comprising measures of media, family, and peer influences, internalisation of media ideals, appearance comparisons, self-compassion, appearance investment, and body appreciation.

**Impact on practice or Results:** Structural equation modelling revealed that only media had a significant effect on body appreciation, and this was partially mediated by appearance comparisons. Subsequent analyses found that appearance investment moderated all three effects in this model, whilst self-compassion only exerted individual effects on appearance comparisons and body appreciation.

**Discussion or Conclusions:** Breast cancer survivors who perceive less pressure from the media experience a higher degree of body appreciation, due to engaging in less appearance comparisons. These effects become stronger when women are less invested in their appearance. Self-compassion is an additional factor which fosters body appreciation. These identified influences and underlying mechanisms of body

appreciation can inform the development of interventions which aim to foster positive body image among women treated for breast cancer.

#### **635 | The effects of changes in values after cancer diagnosis and peer support on work motivation and health-promoting behaviors**

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**Background/rationale or Objectives/purpose:** In Japan, one in four people aged 30 to 59 has cancer. They are working generations, so it is important to support them to work while continuing treatment. We focused on peer support in this research. We conducted a survey to find out how peer support and changes in values due to experiences with cancer affect the willingness to work and the maintenance of health-promoting behaviors.

**Methodology or Methods:** The subjects of the survey are cancer survivors aged 20 to 59 years who have an opportunity to receive peer support and are working. The questionnaire was distributed to 103 cancer survivors, with 34 returned. The questionnaire included Japanese version of the Posttraumatic Growth Inventory (PTGI-J), the peer social support scale (PSS), the General Health Questionnaire-28, the work motivation scale and the questions of health-promoting behaviors. Multiple regression analysis was conducted to examine the effects of changes in values after cancer diagnosis and peer support on work motivation and health-promoting behaviors.

**Impact on practice or Results:** New possibilities on the PTGI-J predicted higher sense of fulfillment of work. Both spiritual change and appreciation of life on the PTGI-J and emotional support on the PSS influenced presence of supportive colleagues at work. Emotional support on the PSS increased aspirations for work, while appraisal support diminished them. Relationship with others on the PTGI-J and emotional support on the PSS influenced maintaining healthy diet.

**Discussion or Conclusions:** Our study shows that post traumatic growth from cancer and realizing peer support, especially emotional support, can lead to motivation for work and maintenance of health-promoting behavior.

#### **622 | Ireland's National Cancer Survivorship Needs Assessment identifies addressing psychological support for cancer patients and their families as a priority**

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**Background/rationale or Objectives/purpose:** The Irish National Cancer Strategy 2017–2026 recommends undertaking a national needs assessment to identify priorities for developing cancer survivorship services and supports to help cancer patients live their best life after a cancer diagnosis.

**Methodology or Methods:** 1) Survey of the acute hospital sector cancer survivorship services as reported by healthcare professionals (HCPs), consisting of. A scoping review of models of survivorship care; an online survey distributed to hospitals (n = 184); and focus group interviews with HCPs (n = 49).

2) A report on the healthcare needs of survivors of childhood cancer with focus groups (n = 33) with survivors and parents of adult survivors of childhood cancer.

3) A scoping review of adult cancer survivors needs in Ireland.

**Impact on practice or Results:** Access to psychological services and support for cancer patients was identified as an unmet need by healthcare professionals and patients. This was on par with unmet physical needs. Patients' needs for psychological and social care occurred along



a trajectory including; at time of diagnosis, treatment and into the survivorship period and end-of-life care. Issues identified include gaps in services available, distress screening as standard of care when services not available, referral pathways, levels and intensity of support needed, multi-disciplinary approaches and access to community supports. Cancer patients who come from marginalised groups, have previous mental health conditions or poor prognosis need specialised care.

**Discussion or Conclusions:** Psychological care is integral to providing quality cancer services. An opportunity exists to build Psycho-Oncology expertise and services among the MDT at many levels and using a hub and spoke approach to linking hospital and community services.

### 600 | Different work-related difficulties and job loss between self-employed and salaried cancer patients

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**Background/rationale or Objectives/purpose:** We aim to compare work-related difficulties and job loss between self-employed and salaried cancer patients.

**Methodology or Methods:** We conducted a cross-sectional survey with 730 adult cancer survivors aged between 20 to 65 who were working at the time of diagnosis from October 2017 to March 2018 at two university-based cancer centers in Korea. Work-related difficulties were assessed using questionnaires developed by a qualitative interview. Multivariable logistic regression was used to identify specific work-related difficulties associated with job loss.

**Impact on practice or Results:** 517 (71%) salaried and 213 (29%) self-employed cancer patients were included in the study. Compared to the salaried patients, self-employed patients were more likely older, married, and had lower monthly family income. Proportion of job loss were 52% and 39% among salaried and self-employed patients, respectively ( $p < .01$ ). Salaried and self-employed patients had different work-related difficulties associated with job loss. Self-employed patients who experienced burden of takeover of business (OR = 8.57; 95% = 2.18, 33.72) and difficulty with a long commute (OR = 13.29; 95% = 1.41, 125.12) were more likely to stop working compared to patients without those difficulties. Salaried patients who had experienced awkward relationship with colleagues (OR = 1.95; 95% = 1.11, 3.40) were more likely to stop working than patient without similar experience.

**Discussion or Conclusions:** Work-related difficulties associated with job loss were different between salaried and self-employed cancer patients. Tailored information and intervention would be necessary for cancer patients to return to work depending on occupation type.

### 576 | The role of self-compassion in moderating the association between fear of cancer recurrence, parenting efficacy and psychological distress in mothers who are breast cancer survivors

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**Background/rationale or Objectives/purpose:** Objective/purpose: Mothers who are breast cancer survivors may experience psychological distress in relation to fears of cancer recurrence and diminished

parenting efficacy. Research suggests self-compassion may alleviate psychological distress, yet little is known about self-compassion in this population. This study examines the interactive roles of self-compassion, fear of cancer recurrence, and parenting efficacy in understanding psychological distress in mothers who are breast cancer survivors.

**Methodology or Methods:** Methods: Ninety-six mothers who are breast cancer survivors completed the Depression, Anxiety and Stress Scale (DASS-21), Cancer-Related Parenting Self-Efficacy (CaPSE) scale, Concerns About Recurrence Scale (CARS), and Self-Compassion Scale (SCS).

**Impact on practice or Results:** Results: Fears of cancer recurrence and parenting efficacy were moderated by self-compassion in predicting anxiety and stress. Mothers reporting high levels of negative self-compassion (i.e. self-judgment, isolation, and over-identification) experienced more anxiety and stress in association with greater fears of cancer recurrence, but not mothers with low levels of these negative dimensions of self-compassion. Also, mothers reporting low levels of positive self-compassion (i.e. mindfulness and common humanity) experienced more stress in association with poor parenting efficacy, but not mothers with high levels of these positive dimensions of self-compassion.

**Discussion or Conclusions:** Conclusion and clinical implications: Engaging in negative dimensions of self-compassion was identified as a potential risk factor, while engaging in positive dimensions of self-compassion was indicated as a potential protective factor. Hence mothers who are breast cancer survivors may benefit from self-compassion focused psychosocial interventions, such as mindfulness training or peer support programs that provide opportunities for social inclusion.

### 571 | Exploring the Survivorship Abyss: Qualitative insights from survivors of prostate cancer, 15 years post-diagnosis

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**Background/rationale or Objectives/purpose:** Men diagnosed with localized prostate cancer are now living well beyond diagnosis and treatment. This is the first qualitative study to explore how men and their partners adjusted to prostate cancer and any persisting or novel treatment-related issues experienced up to 15-years post-diagnosis.

**Methodology or Methods:** Participants were purposively sampled from the 15-year follow-up phase of the New South Wales Prostate Cancer Care and Outcomes study. Twenty-seven men and ten partners completed semi-structured interviews. Interview data were transcribed and thematically analyzed applying a Framework methodology.

**Impact on practice or Results:** Five main interconnecting themes relating to the coping and adjustment experience were identified: 1) Attitudes & responses to diagnosis & treatment; 2) Personal & social relationships; 3) Interaction with the health care system; 4) Lasting impacts; and 5) The survivorship abyss. Many men and partners identified gaps along the continuum of care, referencing a 'secret club' they felt forced into when diagnosed. Perceived lack of informational support with persisting treatment side-effects, especially sexual dysfunction, was prominent. Patients and partners with adequate supportive care and greater trust in their clinicians reported higher levels of resilience and positivity in accepting long-term challenges and limitations.

**Discussion or Conclusions:** Long-term survivors from prostate cancer continue to experience lasting impacts from treatment and report a lack of continued care immediately after through to the second decade post-treatment. Systematic implementation of survivorship care plans

in this setting has the potential to address reported service gaps and provide relevant and timely information and supportive services to patients and partners, consequently avoiding the survivorship abyss and enhancing quality of life.

### 567 | A meta-review of qualitative psychosocial cancer survivorship research: The state of the survivorship evidence-base

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**Background/rationale or Objectives/purpose:** As the number of qualitative studies examining psychosocial aspects of cancer survivorship increases, so too does the number of systematic reviews. This meta-review (systematic review of systematic reviews) aimed to assess the evidence base, summarising existing qualitative findings and identifying gaps for further research.

**Methodology or Methods:** Systematic reviews published from 1980–2018 were identified via Medline, Embase, CINAHL, PsycINFO databases. While qualitative and mixed methods reviews were included, only results pertaining to the qualitative experiences of cancer survivors (post-treatment) were included. The JBI Critical Appraisal Checklist for Systematic Reviews was used to assess review quality.

**Impact on practice or Results:** Of the 1001 titles retrieved, 60 reviews were included in the final meta-review. 17 reviews included only qualitative studies and 43 included quantitative and qualitative studies. Whilst many reviews included mixed cancer types (22), the majority of reviews included only one cancer type (breast (19), gynaecological (10), prostate (5), haematological (2) colorectal (1), bladder (1), and melanoma (1)). Reviews focused on numerous aspects of survivorship such as quality of life, health services, return to work, sexuality, and psychological issues.

**Discussion or Conclusions:** This meta-review provides insight into areas of research density and paucity. Breast and gynaecological cancer survivors are strongly represented, with few or no reviews for other common cancers (e.g. lung, colorectal, melanoma). Insights from each of the specific survivorship topic areas (e.g. sexuality, health services) will be discussed, as well as identification of topic areas lacking qualitative insights (e.g. experiences of male survivors, ongoing symptoms, urban/rural survivors, financial toxicity, resilience and coping).

### 555 | Interaction effects between attribution and emotional responses on interpersonal coping after friends' cancer disclosure in the general population

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**Background/rationale or Objectives/purpose:** Identifying factors associated with interpersonal coping following friends' cancer disclosure in the general population.

**Methodology or Methods:** A cross-sectional internet survey was conducted among the Japanese general population without a history of cancer. A total of 1,076 adults completed 1) the Cancer Attribution Scale, 2) the Cancer Stereotype Scale 3) the Emotional Reaction Scale, 4) the Interpersonal Coping Scale, 5) the Cancer Knowledge Scale, 6) the Illness Perception Questionnaire Causes, 7) the Kessler Psychological Distress Scale, 8) the Minnesota Multiphasic Personality Inventory L-scale, and 8) demographic characteristics. Data from 925 participants were eligible for statistical analysis.

**Impact on practice or Results:** Participants' average age was 47.2 ( $\pm 11.3$ ), 65% were male, and 57% had known people (friends, families, or colleagues) with cancer. Hierarchical multiple regression revealed that being male ( $b = -0.106$ , 95% CI  $-5.081 - 1.783$ ), perceiving cancer as caused by patients' psychological factors ( $b = -0.138$ , 95% CI  $0.363 - 0.900$ ), psychological distress ( $b = 0.103$ , 95% CI  $0.170 - 0.495$ ), attributing responsibility and controllability of cancer to patients ( $b = 0.291$ , 95% CI  $0.604 - 0.908$ ), and negative emotional reactions toward friends with cancer ( $b = 0.307$ , 95% CI  $0.653 - 0.955$ ) were associated with reduced empathic coping. Interactions between attributions and negative emotional reactions were observed ( $b = 0.105$ , 95% CI  $0.021 - 0.060$ ).

**Discussion or Conclusions:** Attribution and negative emotional reactions were associated with less empathic coping. Psychoeducational programs should reduce stigma by emphasizing causes of cancer (rather than personal responsibility and controllability of cancer) and managing negative emotional reactions following friends' cancer disclosure.

### 551 | Emotiversity in Breast Cancer Survivors: Associations with Health and Well-being over the first year following treatment

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**Background/rationale or Objectives/purpose:** Expanding on differences in mean levels of emotions, the purpose of this study was to consider how emotiversity—the relative breadth and abundance of different emotions—is associated with health and well-being outcomes in breast cancer survivors.

**Methodology or Methods:** Breast cancer survivors ( $N = 201$ ;  $M_{\text{age}} = 54.89$ ,  $SD_{\text{age}} = 11.04$  years) completed five questionnaires assessing their positive and negative affect, depression, health management, social support, and well-being at intervals separated by approximately 3 months. The positive and negative affect scores across all five waves were used to calculate emotiversity scores. Multiple regression analyses were conducted to predict depression, health management, social support, and well-being at wave five, after controlling for age, BMI, time since diagnosis, and breast cancer stage at diagnosis.

**Impact on practice or Results:** Experiencing greater diversity in positive emotions across all five waves was associated with health management ( $R^2 = .18$ ,  $b = .27$ ), depression ( $R^2 = .40$ ,  $b = -.28$ ), social support ( $R^2 = .15$ ,  $b = .22$ ), and well-being ( $R^2 = .41$ ,  $b = .19$ ). Greater diversity in negative emotions across all five waves was associated with health management ( $b = -.24$ ), mental health ( $b = -.45$ ), depression ( $b = .56$ ), social support ( $b = -.32$ ), and well-being ( $b = -.61$ ).

**Discussion or Conclusions:** Consistent with evidence in other subgroups (Ong et al., 2018; Quidbach et al., 2014), there are important health benefits of emotiversity, specifically positive emotiversity, in the early post cancer treatment phase. Experiencing a diversity of positive emotions may be beneficial to the health of cancer survivors as they encounter a variety of cancer-related changes and stresses.

### 527 | "Is there anything else you would like to tell us?" – A thematic analysis of free-text comments from a self-management questionnaire with people affected by cancer

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University of Lincoln, Lincoln, United Kingdom

**Background/rationale or Objectives/purpose:** Researchers are frequently using open-ended questions at the end of questionnaires that invite respondents to add, in their own words, further information about issues covered in the questionnaire. The aim of this study was to present the qualitative findings from the further information section at the end of a questionnaire that was designed to collect data on aspects of self-management in people affected by cancer.

**Methodology or Methods:** Respondents were asked: 'Thinking about how you manage your health and health care, if there is anything else you would like to tell us about your experience, please write in the box below.' Free-text responses were analysed thematically.

**Impact on practice or Results:** 128 participants completed the free-text response at the end of the questionnaire. The main overarching theme was the concept of the participants "moving on" from cancer and developing a meaningful life for themselves following diagnosis and treatment. For most, this incorporated making adjustments to their physical, social, psychological, spiritual and emotional wellbeing. "Luck" was another overwhelming theme where many participants stated they were "glad to still be alive" and "consider myself very lucky." Participants reported adjustments made to health behaviours such as leading an active lifestyle and making changes to their diet and nutrition. The final theme incorporates the participants identifying their main sources of support, both clinical and non-clinical, some of which they stated "could not have done it without them."

**Discussion or Conclusions:** The findings highlight the valuable insight that free-text comments can add as a data source at the end of self-completion questionnaires with people affected by cancer.

## 526 | Predictors of suicidal ideation in a large, register-based sample of adult long-term childhood cancer survivors

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**Background/rationale or Objectives/purpose:** Long-term childhood cancer survivors (CCS) are at risk for somatic and psychosocial late effects. Previous research has attested to increased rates of suicidal ideation (SI) in CCS, a serious indicator of distress and a risk factor for death by suicide. However, little is known about predictors of SI among CCS which go beyond illness- and treatment related factors.

**Methodology or Methods:** A register-based sample of 951 adult long-term CCS ( $M_{age} = 34.1$  years [ $SD = 5.6$ ],  $M_{age\ at\ diagnosis} = 6.1$  years [ $SD = 4.3$ ]) underwent extensive medical assessments and filled out questionnaires. We calculated logistic regression analyses (for the whole sample and in sex-specific models) on SI testing predictors of different areas: sociodemographic, cancer-related, somatic, cardiovascular risk factors, psychosocial, and health behavior.

**Impact on practice or Results:** SI was reported by 73 (7.7%) CCS and previous suicide attempts were reported by 26 (2.7%) CCS. The most relevant predictors of SI in the whole sample were the risk factors sleep disturbance and dyslipidemia. Being married was protective. Disease- and treatment-related aspects were not directly related to SI. In sex-specific analyses, some predictors were more relevant in women (pulmonary disease) or in men (dyslipidemia).

**Discussion or Conclusions:** CCS' well-being depends on the individual social environment and living situation as well as on somatic factors. Interventions to reduce CCS' risk of suicide could target the social domain. They could also counteract stressors such as sleep problems, and foster productive coping strategies to live with other late effects which are not reversible.

## 523 | Recalled rearing behaviour in adult long-term survivors of childhood cancer: Comparison with the general population and relevance for mental health

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**Background/rationale or Objectives/purpose:** Childhood cancer can affect the relationship between parents and their child. However, no large study to date has systematically investigated recalled parenting behaviour in long-term survivors and a) compared it to the general population and b) tested associations with current mental distress symptoms.

**Methodology or Methods:** The Recalled parental rearing behaviour questionnaire distinguishes the dimensions emotional warmth, rejection/punishment, and control/overprotection. A register-based sample of adult long-term cancer survivors ( $N = 951$ ) was compared with a representative age-matched population sample ( $N = 2,042$ ). Comparisons were calculated using general linear models. We used hierarchical linear regression models to investigate the associations of recalled rearing behaviour and disease- and treatment-related factors with long-term survivors' current depression and anxiety symptoms (PHQ-9, GAD-7).

**Impact on practice or Results:** Compared to the general population, cancer survivors remembered both parents as emotionally warmer, less rejecting, less controlling, and more overprotective. Both maternal and paternal behavior were relevant for mental health in adulthood: while rejection and overprotection were associated with elevated anxiety and depression levels, maternal control was associated with lower symptom burden. In women, paternal control was associated with more anxiety and depression. In men, having received radiotherapy was associated with more anxiety.

**Discussion or Conclusions:** Parents of children with cancer seem to adapt their behaviour to the particularly challenging situation. For mental health in adulthood, remembered parental behaviour was more relevant than variables directly associated with illness and treatment. This highlights the need to involve parents in treatment and aftercare and to support them in caring for their children.

## 522 | Linking cancer and mental health in men and women in a representative community sample

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**Background/rationale or Objectives/purpose:** In aging populations, a growing number of individuals are affected by cancer. However, the relevance of the disease for mental health is still controversial, especially after treatment. We drew from a representative community sample to explore the link of cancer with different indicators of mental health assessing different periods of time.

**Methodology or Methods:** A cohort of 14,375 men and women (35–74 years) underwent medical assessments and was queried about cancer history, previous diagnoses of mental disorders, current mental distress symptoms, and current subjective health appraisal.

**Impact on practice or Results:** 1,066 participants (7.4%) reported a diagnosis of cancer (survival time  $M = 9.79$  ( $SD = 9.07$ ) years). Most common were breast (24.3%), skin (20.9%), gynecological (13.8%), and prostate cancer (12.9%). Based on cut-off-scores of standardized self-report scales (PHQ-9, GAD-2), rates of depression (8.4%; 95%CI 6.90–10.30) and anxiety symptoms (7.8%; 95%CI 6.30–9.60) corresponded to those of participants without cancer. In men, cancer was related to a lifetime diagnosis of depression ( $OR = 2.15$ ; 95%CI 1.25–3.64). At the time of assessment, cancer was associated with reduced subjective health in both sexes. Prostate cancer was the only diagnosis associated with higher levels of anxiety and depression symptoms.

**Discussion or Conclusions:** Findings indicate different relations of cancer with well-being over time, and different relations of cancer with different domains of mental health. A history of cancer is not universally linked to lasting distress. However, prostate cancer survivors might be a vulnerable group. The study points out potential targets for interventions to alleviate distress and foster a positive body image, e.g. physical activity.

## **521 | A rural-urban comparison of confidence to self-manage in people affected by cancer following treatment: A cross-sectional study**

*David Nelson, Ros Kane, Ian McGonagle, Christine Jackson*  
*University of Lincoln, Lincoln, United Kingdom*

**Background/rationale or Objectives/purpose:** There is a lack of research examining whether rural-urban residence has a significant impact on confidence to self-manage the consequences of cancer following treatment. The aim of this study was to compare confidence to self-manage in a sample of people affected by cancer who were post treatment from rural and urban settings in the East Midlands of England.

**Methodology or Methods:** The study used a cross-sectional self-completion questionnaire that collected data on demographics, rural-urban residence, and confidence to self-manage using the Cancer Survivors Self-Efficacy Scale (Foster et al, 2013). Participants rated their confidence to perform 11 self-management behaviours (1 = not at all confident to 10 = totally confident). Independent samples t Tests and Mann Whitney U Tests were conducted.

**Impact on practice or Results:** 227 participants completed a questionnaire (27% response rate). The mean age was  $66.86 \pm 11.22$  (range 26–90). 52% of participants were female and 48% male. With regards to residence, 45% resided in rural areas and 53% in urban areas. Overall, rural participants ( $7.86 \pm 1.70$ ) reported significantly ( $p < 0.01$ ) higher cancer-related self-efficacy compared to those in urban areas ( $7.09 \pm 1.96$ ). In terms of confidence to perform specific self-management tasks, rural participants had significantly higher confidence to manage fatigue ( $p < 0.05$ ), physical discomfort ( $p < 0.01$ ), emotional distress ( $p < 0.001$ ), other symptoms or health problems ( $p < 0.05$ ), and to deal with problems caused by cancer by themselves ( $p < 0.05$ ).

**Discussion or Conclusions:** Whilst the active treatment phase presents considerable challenges for individuals in rural areas the findings suggest that the rural environment has the potential to positively influence confidence to self-manage in the transition to survivorship.

## **520 | Relationships between Health Literacy Self-management and Quality of Life in Head and Neck Cancer Survivors following Primary Treatment**

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**Background/rationale or Objectives/purpose:** The objective of this research is to explore differences in sociodemographic, clinical and psychosocial characteristics (fear of recurrence, health related quality of life and self-management practices) in head and neck cancer (HNC) survivors with adequate and inadequate health literacy.

**Methodology or Methods:** A population-based survey was conducted in Ireland with 734 HNC survivors. Alongside health literacy, demographic, clinical and psychosocial variables (Fear of Relapse/Recurrence Scale (FRRS)), self-management practices (Health education impact questionnaire (heiQ)) and health related quality of life (FACT H&N) were collected.

**Impact on practice or Results:** 395 individuals responded (54% response rate). 26% of the sample had inadequate health literacy. There was a significantly higher proportion of people with inadequate health literacy among 60–69 year olds, those with only primary education, medical-card holders, those living in rural areas and those with cancer of the larynx. Fear of recurrence was significantly higher among the inadequate health literacy group ( $P = 0.022$ ). In the inadequate health literacy group self-management practices were significantly lower for “Health Directed Behaviour” ( $P = 0.042$ ), “Positive and Active Engagement in Life” ( $P = 0.019$ ) and “Constructive Attitudes and Approaches” ( $P = 0.005$ ). For health related quality of life, the inadequate health literacy group had significantly lower mean scores for “Personal Wellbeing” ( $P = 0.023$ ) and for “Functional Wellbeing” ( $P = 0.003$ ).

**Discussion or Conclusions:** Health literacy is an understudied area among head and neck cancer survivors and could provide valuable insight into improving self-management practices and quality of life in this group. Those developing interventions for head and neck cancer survivors should consider how inadequate health literacy might influence outcomes.

## **511 | Socio-demographic and medico-social factors affecting the quality of life of surviving children with brain tumors, acute lymphoblastic leukemia and their parents**

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**Background/rationale or Objectives/purpose:** The goal of rehabilitation in paediatric oncology is to improve quality of life (QoL) of survivors and their close.

**Aim:** to assess QoL and factors affecting QoL in children with brain tumors (BT), acute lymphoblastic leukemia (ALL) and their parents.

**Methodology or Methods:** Children – 492, 5–17 y.o.: with BT – 241 (medulloblastomas, MB – 129); with ALL – 251. Parents: children with BT – 243 (MB – 127), with ALL – 246. Cohort socio-demographic

study (1085 mothers with children-cancer survivors); control group – Russian Federation Statistic Agency's research. Assessment QoL of children – PedsQL™, QoL of parents – RAND SF-36. Statistics: student's t-test, Mann-Whitney test.

**Impact on practice or Results:** QoL in MB survivors compared to ALL survivors was significantly lower ( $p = 18.1\%$  in our cohort study were diagnosed with serious reproductive health disorders vs  $0.6\%$  in the control ( $p$

**Discussion or Conclusions:** Lower QoL in BT survivors and their parents compared to ALL cases as well as the impact of material condition reflect heavier treatment of children with BT, more expensive and longer rehabilitation. These families are particularly in need of medico-social care.

## 510 | Russian AYA cancer survivors' relationships with mothers and peers: associations with socio-demographic and disease/treatment related factors

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**Background/rationale or Objectives/purpose:** It's helpful to pay the attention to the disease/treatment-related factors associated with separation and intimate relationship in meeting developmental needs of AYA cancer survivors (McDonald, Patterson, Kim, White, 2018). The aim of the current study was to analyze the associations between disease/treatment-related and socio-demographic factors and the AYA cancer survivors' relationships with mothers and peers.

**Methodology or Methods:** 34 AYA (age = 16,6; female = 13, male = 21) cancer survivors (leukemias = 14, lymphomas = 20, time after the treatment = 45,2 months) were included into the study. The Russian original Questionnaire on child-parental relationship (Markovskaya, 1999) and Mehrabian Affiliation Tendency Questionnaire (1976) were used.

**Impact on practice or Results:** Survivors' age, age at the diagnosis, mother's age, time after the treatment, quantity of siblings, sex, diagnosis type were examined. There were no significant correlations between observed factors and AYAs' motivation of affiliation; Fear of peer rejection was stronger for girls ( $p \leq .05$ ). Age was associated with Emotional Distance ( $r = .369$ ,  $p \leq .05$ ), Rejection ( $r = .468$ ,  $p \leq .05$ ), Lack of cooperation ( $r = .500$ ,  $p \leq .01$ ); quantity of siblings was correlated with Rejection ( $r = .439$ ,  $p \leq .05$ ). Age at diagnosis was associated with Strictness ( $r = -.393$ ,  $p \leq .05$ ) and Disagreement ( $r = .365$ ,  $p \leq .05$ )

**Discussion or Conclusions:** We found associations between characteristics of relationship with mother and survivor's age, quantity of siblings, age at diagnosis. Age and quantity of siblings seem to be common factors which could touch the adolescent view of their mothers' attitudes. Age at diagnosis may be understood as a specific one for AYA survivors' perspective to their relations with mothers.

## 502 | An Evaluation of Standardized versus Personalized Survivorship Care Plans for Breast Cancer Survivors

*Nicole Anna Rutkowski<sup>1</sup>, Carrie Liska<sup>2</sup>, Kelly-Anne Baines<sup>2</sup>, Vicky Samuel<sup>2</sup>, Brittany Mutsaers<sup>1</sup>, Cheryl Harris<sup>2</sup>, Sophie Lebel<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Survivorship care plans (SCPs), in the form of a treatment summary and follow-up surveillance guidelines, have been recommended for cancer survivors as they transition from cancer centers back to the care of their primary care provider (PCP) to assist in coordination of follow-up care. The Wellness Beyond Cancer Program provides personalized SCPs which takes a registered nurse approximately 45 minutes to individually prepare. Due to increasing human resource constraints, a standardized SCP has been developed to reduce SCP completion time.

**Methodology or Methods:** The goal of this program evaluation was to determine whether standardized SCPs are as informative and empowering as personalized SCPs. Primary breast cancer survivors who received either a standardized or personalized SCP were asked to complete a pre and post survey during their discharge appointment between mid-March and mid-May 2019. Survivors completed an in-house survey that assessed satisfaction with information received and level of knowledge acquired. Empowerment was measured using The Perceived Efficacy in Patient-Physician Interactions and The Patient Activation Measure.

**Impact on practice or Results:** Cost-efficient standardized SCPs may help alleviate human resource constraints, while ideally improving patient knowledge, engagement, and communication amongst survivors and healthcare providers.

**Discussion or Conclusions:** SCPs are important communication tools between cancer survivors, their PCPs, and other healthcare providers. However, their preparation can be resource-intensive. Should standardized SCPs result in similar knowledge and empowerment outcomes as personalized care plans, they may be considered for development and utilization in cancer centers. Findings from this evaluation will be shared and standardized SCPs utility will be discussed.

## 498 | Qualitative experiences of colorectal cancer survivors: A systematic review

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**Background/rationale or Objectives/purpose:** Colorectal cancer (CRC) is the third most common cancer diagnosis for men and women in Australia and the United States, and the second most common in Canada. Five-year survival rates for CRC are 65–90% in these countries. An understanding of the psychosocial outcomes of CRC survivorship is imperative for providing optimal care to survivors. Qualitative research allows for a deep and rich insight into cancer survivors' psychosocial experiences. Currently, no systematic reviews on qualitative CRC survivorship experiences have been performed. We aimed to fill this gap.

**Methodology or Methods:** A systematic review of qualitative studies on CRC survivorship is underway. Five databases (PsycINFO, MEDLINE, Embase, CINAHL, PubMed) were searched with terms related to colorectal, cancer, survivorship, and qualitative research. Two raters will conduct screening of titles and abstracts, full-text screening, data extraction, bias ratings, and thematic synthesis of findings. We are using the CASP appraisal checklist for qualitative research to assess bias. Any disagreements between the two raters will be resolved through consultation with a third rater.

**Impact on practice or Results:** 1352 articles were found after de-duplication. Following screening, 262 articles remain for full-text screening. The results of the thematic synthesis will be presented in detail. These articles primarily explore the post-treatment survivorship phase.

**Discussion or Conclusions:** This systematic review will provide a greater understanding of the qualitative research that has been conducted on CRC survivors. This will provide guidance for researchers and health professionals to provide better psychosocial support and improve survivorship outcomes for CRC survivors.

## 474 | Social support and body image among young adult cancer survivors: A YACPRIME Study

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**Background/rationale or Objectives/purpose:** Cancer treatment in young adults (YAs) causes appearance-related changes including scarring, weight change, and hair loss, which can affect perceptions of body image long into survivorship. Poor body image may be related to lower perceptions of relevant and valuable social support in YAs. Conversely, perceptions of social support may help to buffer negative body image, but the evidence is scant in YA. The purpose of this study was to examine the relationship between social support and body image among YA cancer survivors.

**Methodology or Methods:** YAs who participated in the YACPRIME study ( $n = 526$ ; Mage = 34 years) completed self-report questionnaires on social support and body image. Social support was measured using the Medical Outcomes Survey – Social Support Scale. This is comprised of four domains: emotional and informational support (e.g., someone to confide in), tangible support (e.g., someone to help you), affectionate support (e.g., someone who shows you love and affection), and positive interaction (e.g., someone to get together with for relaxation). Body image was measured using the Body Image Scale.

**Impact on practice or Results:** All types of social support were significantly correlated with body image ( $r_s = -.17$  to  $-.28$ ;  $psF(4,521) = 11.28$ ,  $pB = -.23$ ,  $p$

**Discussion or Conclusions:** Programs targeting body image in YA cancer survivors should emphasize social support, particularly emotional and informational support, to help reduce negative body image experiences.

#### 469 | Fertility Preservation and Post-Traumatic Growth: A YACPRIME Study

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**Background/rationale or Objectives/purpose:** The current study seeks to describe the prevalence of fertility preservation (FP) knowledge, discussions, and engagement in a heterogeneous sample of Canadians diagnosed with cancer in young adulthood and test the relationship of these variables to later post-traumatic growth (PTG).

**Methodology or Methods:** Data was taken from the YACPRIME study, a national cross-sectional survey of Canadians who were diagnosed with cancer between the ages of 15–39. This sub analysis included 487 individuals who were diagnosed after 2006, to coincide with the initial ASCO fertility clinical practice guidelines. Participants self-reported demographic and disease characteristics, responded to questions regarding their experience with FP, and completed the Post-Traumatic Growth Inventory.

**Impact on practice or Results:** On average the sample was 43.43 years old ( $SD = 5.38$ ), primarily female ( $n = 423$ , 87%), and self-identified as white ( $n = 425$ , 87%). 81% reported awareness of risk, 50% discussed FP, and 12% pursued FP. PTG was higher for those with knowledge of fertility risk [ $F(1, 481) = 6.49$ ;  $p = .011$ ], but did not differ between those who discussed FP vs. not, or made arrangements vs. not. Those who reported not engaging in FP because of their own choice [ $F(1, 422) = 7.31$ ;  $p = .007$ ] or their doctor's recommendation not to delay treatment [ $F(1, 422) = 8.23$ ;  $p = .004$ ] reported significantly higher PTG.

**Discussion or Conclusions:** Although awareness of risk is high, only half of young adults report having had conversations about FP with their team. The results suggest that constructing a “story” around choices made during treatment may positively influence later PTG.

#### 468 | Exploring body image and psychological distress within the posttraumatic growth model among young adult cancer survivors: A YACPRIME study

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**Background/rationale or Objectives/purpose:** Post-traumatic growth (PTG) is an integral psychosocial outcome during survivorship, yet is poorly understood among YA. Founded on the PTG framework, the purpose of this study was to test the relationship between body image and PTG, as well as explore psychological distress as a mediator of this relationship.

**Methodology or Methods:** Participants completed measures of PTG, body image, and psychological distress as part of the YACPRIME study, a national survey of Canadians diagnosed with cancer between the ages of 15 and 39.

**Impact on practice or Results:** A sample of 531 ( $M_{age} = 34$ ,  $SD = 6.3$  years; 12.4% male) YA cancer survivors completed the questionnaire. Females reported significantly ( $p < .05$ ) higher body dissatisfaction and no other sex differences were noted. In preliminary analyses, body image was significantly associated with distress ( $r = .43$ ,  $p < .001$ ) and PTG ( $r = -.10$ ,  $p = .02$ ). Distress and PTG were also correlated ( $r = -.12$ ,  $p = .004$ ). Using bootstrapped mediation analysis controlling for relevant personal and cancer specific variables, the indirect effect of distress mediating the association between body image and PTG was not significant (effect =  $-.10$ ,  $SE = .06$ ; 95% CI =  $-.23$  to  $.05$ ).

**Discussion or Conclusions:** Psychosocial interventions targeting YA should focus on addressing body image concerns and explore other relevant coping strategies to test additional psychosocial pathways identified in the PTG framework to guide the management of distress and growth following cancer in young people.

#### 465 | Connectedness to the Young Adult Cancer Community and Post Traumatic Growth: A YACPRIME Study

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**Background/rationale or Objectives/purpose:** Support from peer cancer survivors can provide a unique sense of community that cannot be gained from other supportive relationships. Simply feeling connected to the young adult (YA) cancer community may promote health and



wellbeing. This study examined the associations between connectedness to the YA cancer community, general social support and post-traumatic growth (PTG) in YA survivors of cancer.

**Methodology or Methods:** The data was obtained from the YACPRIME study, a cross-Canadian survey of YA cancer survivors. Multivariate logistic regression, adjusting for relevant demographic and clinical variables, was used to examine the association between connectedness to the YA community (1-item Likert scale) and PTG (low/high), stratified by social support (low/high).

**Impact on practice or Results:** The sample included 434 individuals ( $M_{age} = 34.07$ ;  $SD = 6.01$ ) of which 86.9% were female ( $n = 377$ ). Feeling connected to the YA community was reported by 71.2% of YAs ( $n = 309$ ) and 40.6% of YAs reported moderate to high PTG ( $n = 176$ ). YAs with low social support who are connected to the YA cancer community had 3.77 greater odds of experiencing PTG ( $p = 0.01$ ) than those who were not connected. YAs with moderate to high social support who are connected to the YA cancer community had 1.36 odds of experiencing PTG, but this effect was non-significant.

**Discussion or Conclusions:** Connectedness to the YA cancer community is associated with greater PTG, particularly for those YAs who have lower levels of social support. Efforts to promote connection and social support among YA cancer survivors may promote better overall adjustment.

#### 453 | Global usage of an internet-based survivorship care plan tool: opportunities and barriers

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**Background/rationale or Objectives/purpose:** Since the publication of From Cancer Patient to Cancer Survivor: Lost in Transition (IOM, 2005) awareness of the unique needs of cancer survivors globally has increased. However, gaps remain in the delivery of survivorship care. Internet based care plan tools can assist patients and providers in accessing this information.

**Methodology or Methods:** OncoLife, is an internet-based survivorship care plan tool that has been available via OncoLink.org since 2007. We observed usage trends of OncoLife from June 2017-January 2019.

**Impact on practice or Results:** Our data demonstrates significant global usage of the OncoLife tool in a total of 133 countries. A total of 77905 plans were created from 2007 to January 2019, with highest non-US usage in Australia (1893), Canada (1573) and the UK (1227). During the study interval, 20081 plans were completed. The data shows that healthcare providers are more likely to complete survivorship plans with/for patients (88.9%) in the US versus non-US countries (33.8%). The number of patients who had not previously received a care plan or treatment summary also differed across countries: 30% US versus 51% non-US.

**Discussion or Conclusions:** OncoLife is used globally, predominantly in English-speaking countries. In the US, there is a higher proportion of OncoLife care plans completed by healthcare providers. This may be related to accreditation guidelines that require completion of survivorship care plans. Internet based survivorship tools can increase care plan access, but barriers including availability in languages other than English and reliability of internet access remain.

#### 446 | Comparison of how chemotherapy (temozolomide) versus radiotherapy in patients treated in Canada with low grade glioma impacts social support, depression, anxiety, work participation and income

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**Background/rationale or Objectives/purpose:** As patients who are diagnosed with low grade brain tumour are expected to survive longer than those with higher grade of brain tumours, it is important to ascertain the impact of treatment on loss of functional abilities which may negatively impact work ability, finances, social support and mood. The presentation will discuss the results of a Canadian socio-behavioural companion study of an EORTC international study comparing chemotherapy (temozolomide) versus radiation in diagnosed patients with low grade gliomas

**Methodology or Methods:** From 2007 to 2009, participants (36 registered and 27 who were randomized to a treatment arm) from 5 Canadian cancer centers completed a socio-demographic questionnaire about social support, employment status and income, the Hospital Anxiety and Depression Scale (HADS) and Quality of Life Assessments (QLQ-C30 and QLQ-BN20). Participants were asked to complete questionnaires every 6 months before randomization and every three months after randomization.

**Impact on practice or Results:** Thirteen participants had chemotherapy and 14 received radiation. At 36 months 21 had died or had tumour progression. The results indicated there is a considerable drop in both arms in those who were employed over time and there was no difference between treatment arms in anxiety, depression and work status. However regardless of treatment arms, females were found to be more anxious and males with high income were more likely to report having a paid job.

**Discussion or Conclusions:** The study showed a need to better support patients diagnosed with a low grade brain and in particular females, with the changes in employment and mood.

#### 444 | Sizing up Stigma: Exploring the Issues of Cancer-Related Stigma among Men with Prostate Cancer in Newfoundland

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**Background/rationale or Objectives/purpose:** To examine how cancer-related stigma impacts prostate cancer survivors' in Newfoundland, by exploring the perceptions and experiences of prostate cancer survivors' who have encountered cancer-related stigma, and the role of the healthcare system.

**Methodology or Methods:** Eleven prostate cancer survivors from Newfoundland participated in semi-structured interviews to examine their lived experiences with cancer-related stigma. All participants were minimum six-months post primary treatment. A social ecological framework was used to explore survivors' experience through intrapersonal, interpersonal, institutional, community, and public policy domains.

**Impact on practice or Results:** Through the social ecological framework, a number of common themes emerged. Interpersonal and intrapersonal factors were most predominant among interviewees. Participants expressed a need to exert control over their condition, most commonly through 'taking action' and removing the cancer from their bodies. Similarly, men reported a feeling of losing control following diagnosis, so taking action may be a way to regain control and one's identity. Some men faced barriers receiving support, whether from community members or other men with cancer. Participants expressed a need for additional support from healthcare professionals. When informational support from healthcare professionals was lacking, participants felt undervalued and ignored.

**Discussion or Conclusions:** From interviews, prostate cancer stigma is felt most on the intra- and interpersonal level. To address this, improved patient education and support is needed, particularly around patient experiences and shifting identities. Healthcare professionals should

also be made aware of patient concerns and find innovative ways to provide time and guidance. Further, local prostate cancer support groups should offer improved social and interpersonal support.

#### 437 | Cohort profiles at baseline in the Macmillan HORIZONS Programme

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**Background/rationale or Objectives/purpose:** As the world population ages and cancer mortality decreases, more people are living with and beyond cancer and experiencing the long-term consequences of cancer and its treatment. The Macmillan HORIZONS Programme is a prospective, longitudinal cohort study exploring clinical and psychosocial outcomes in three cohorts of cancer patients. The aim of this poster is to describe the baseline characteristics, by cancer type, of the HORIZONS participants.

**Methodology or Methods:** The HORIZONS cohorts consist of patients with breast cancer (diagnosed < 50 years), non-Hodgkin Lymphoma (NHL), or a gynaecological cancer (cervical, endometrial, ovarian, vulval). The aim was to invite all newly diagnosed patients due to have curative intent treatment to participate. The target sample size was 3,000. Sample size calculations were based on the primary outcome measure (Quality of Life in Adult Cancer Survivors). Participants were recruited from 110 hospitals across the UK between September 2016 and March 2019. Participants consented to completing self-report questionnaires and for recruiting hospitals to gather clinical information from participants' medical records. Aggregate data on patients who declined participation were also collected.

**Impact on practice or Results:** Over 3,000 patients were recruited. This poster will summarise recruitment into the study for each cohort. HORIZONS cohort profile reporting will follow the STROBE guidance and demographic and clinical characteristics will be presented.

**Discussion or Conclusions:** Results from the Macmillan HORIZONS Programme will contribute to knowledge of cancer survivors' characteristics, outcomes and experiences, including those with less common cancers. HORIZONS has the potential to transform care for people living with and beyond cancer.

#### 432 | The Role of Cognitive Biases in Relation to Cancer: A Systematic Scoping Review

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**Background/rationale or Objectives/purpose:** Fear of cancer recurrence/Progression (FCR/P) is amongst the most commonly reported long-term survivorship issues. However, much less is known about the cognitive processes involved in the development and maintenance of FCR/P. The review aims to (1) summarize and synthesize the literature on the presence and impact of cognitive biases (attention, interpretation or memory) in cancer survivors and their caregivers in processing cancer-related stimuli. (2) assess if these biases are associated with psychological outcomes namely, FCR/P, depression, and anxiety.

**Methodology or Methods:** PsycINFO, Medline, Scopus, CINAHL, Web of Science and Embase is being searched with no restriction on the publication period. Studies will need to sample participants (regardless of age) who have had or currently have cancer or those who are caregivers of patients who have or have had cancer. The review will consider all articles that examined cognitive biases using an accepted experimental paradigm in the context of cancer. We will conduct a nar-

rative synthesis of the obtained findings following data extraction and quality assessment.

**Impact on practice or Results:** Preliminary search suggests that there are relatively few studies of implicit processes in cancer. The available studies have mixed findings. As the review is ongoing, detailed results will be presented in IPOS 2019 congress.

**Discussion or Conclusions:** The review will identify available literature and gaps in the existing literature and provide further clarity on the role of implicit cognitive processes in FCR/P. This may offer directions for future research and potentially critical insights to develop tailored interventions to treat FCR/P.

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#### 418 | Adapting the SCID-5 PTSD Module to Assess Young Adult Cancer Survivors

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**Background/rationale or Objectives/purpose:** Objectives: Past research indicates young adult cancer survivors (YACS) are at increased risk for Posttraumatic Stress Disorder (PTSD). However, DSM-5 significantly revised PTSD criteria, including limiting circumstances in which life-threatening illness qualifies as a traumatic event. To support future PTSD research in YACS, we tailored the PTSD module of the Structured Clinical Interview for the DSM-5 (SCID-5) and applied it to 50 YACS.

**Methodology or Methods:** Methods: After reviewing the module, conducting training interviews with confederates and 5 YACS, we adapted the PTSD module as follows: 1) The skip-logic was altered so each interview is scored using standard SCID criteria and published criteria for subthreshold PTSD; 2) The relationship of cancer to PTSD symptoms is assessed in all individuals; 3) Questions were added to probe when life-threatening illness meets qualifying event criteria.

**Impact on practice or Results:** Results: The tailored PTSD module was used with 50 YACS (30 Females, 20 males) ages 18–40. Interviews showed the module performed well, though querying current, partial and cancer-related PTSD, can require ≥ 1 hour in some cases. 25 interviews (50%) generated a scoring question the interviewer referred for review. Common questions involved whether a medical condition met criteria for a qualifying event, and how to weigh effects of psychological development and prescribed medications on recall of symptoms and past events.

**Discussion or Conclusions:** Conclusions: Studying PTSD in YACS requires measures adapted to this population and current diagnostic criteria. Results show the DSM-5 PTSD module can be successfully adapted to this population, although users may need to anticipate scoring questions specific to the YACS population.

#### 417 | Making Sense of Pain after Cancer: A Theoretical Framework

*Lauren Heathcote*

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**Background/rationale or Objectives/purpose:** When an individual lives beyond cancer, s/he faces a lifetime of uncertainty about new or changing physical symptoms. Pain could indicate a normal health event (e.g. muscle ache), a consequence of toxic treatment, or cancer recurrence. The challenge for every survivor is knowing how to monitor, attend to, and interpret everyday experiences of pain. Thus, pain presents both a physical and a psychological challenge for cancer survivors. Dr. Heathcote will present the new Cancer Threat Interpretation (CTI) theoretical model that describes cognitive, affective, and behavioral consequences of experiencing pain after cancer. She will present some of the first qualitative data stemming from this new framework, describing how young

survivors and live with pain-related uncertainty and how this impacts their daily lives.

**Methodology or Methods:** Semi-structured interviews about the experience of pain were completed with 20 AYA (15–25 years) cancer survivors (>1 year after end of treatment) and their parents.

**Impact on practice or Results:** Pain presents a unique biopsychosocial challenge for cancer survivors. AYA survivors report struggling with pain after cancer, particularly knowing how to interpret and respond to pain within the context of potential disease recurrence. Pain is also a reminder of previous trauma, of current weakness, and of vulnerability to future disease. Findings from this study have implications for amending the CTI model.

**Discussion or Conclusions:** Pain has a significant impact on young survivors' physical and psychological health. The meaning of pain must be considered when developing pain interventions for survivors. One point of intervention is in how the clinician discusses monitoring of pain as a sign of disease recurrence.

#### 410 | Pain, Intolerance of Uncertainty, and Fear of Cancer Recurrence in Long-term Survivors of Childhood Cancer

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**Background/rationale or Objectives/purpose:** Emerging evidence suggests long-term survivors of childhood cancer (LTSCC) experience pain years following completion of treatment. Factors that may be related to the experience of pain are unknown. Fear of cancer recurrence and intolerance of uncertainty (IU) may potentially elicit catastrophizing thoughts around pain of unclear origin. The goal of the current study is to explore the relationships between IU, pain, and FoCR in LTSCC.

**Methodology or Methods:** Survivors (n = 51; 39.6% male, mean age = 15.8 years, mean time since diagnosis = 10.67 years) were recruited from the Alberta Children's Hospital, and data collection is ongoing. Participants completed the Intolerance of Uncertainty Scale (IUS), Cancer Worry Scale (CWS), Pain Catastrophizing Scale (PCS), and Pain Questionnaire.

**Impact on practice or Results:** Preliminary analyses revealed that 14 (27.5%) survivors reported experiencing chronic pain defined as pain persisting for at least 3 months. Bivariate correlations showed that higher PCS scores were significantly related to higher CWS scores ( $r = .328$ ,  $p = .020$ ) and higher IUS scores ( $r = .462$ ,  $p = .047$ ). IUS scores were not significantly related to CWS scores ( $r = .110$ ,  $p = .654$ ). Independent t-tests revealed no significant group differences in IUS scores,  $t(17) = .056$ ,  $p = .816$  or CWS scores  $t(47) = 1.445$ ,  $p = .235$  between survivors who reported experiencing chronic pain versus no chronic pain.

**Discussion or Conclusions:** The relationships between pain, IU, and FoCR require further elucidation. Data from the current study will provide insight into the negative interpretation of pain as a potential mechanism driving FoCR. Future research should test the predictive abilities of IU on biopsychosocial outcomes longitudinally in LTSCCs.

#### 408 | A Qualitative Study of the Impact of Childhood Cancer on Survivors' Romantic Relationships and Physical Intimacy

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**Background/rationale or Objectives/purpose:** Many childhood cancer survivors experience impairments in psychosocial functioning, yet limited research has examined their psychosexual outcomes. This qualitative study examined survivors' perceived impact of cancer on their romantic relationships and physical intimacy.

**Methodology or Methods:** Phone interviews were completed by 57 adult survivors of childhood cancer exploring the impact of cancer on (a) romantic relationships and (b) sexual/physical intimacy. Verbatim transcripts were coded using the constant comparison method using selective coding until saturation was reached (n = 35). Survivors were 23–42 years old (M = 29.4; 64% female) and 10–37 years post-diagnosis (M = 18.2).

**Impact on practice or Results:** Regarding romantic relationships, 50% of females and 63% of males reported positive effects of childhood cancer, while 64% of females and 56% of males reported a negative impact; approximately one quarter of survivors reported no impact of cancer on romantic relationships. Identified positive themes were: creating new perspectives, increased maturity, and stronger bonds with partners. Negative themes included: fertility-related concerns, sexual (e.g., erectile dysfunction) and physical insecurities (e.g., scarring, baldness), feeling emotionally guarded, and delayed dating. Thirty-nine percent of females and 44% of males perceived having fewer partners than peers. Regarding physical intimacy, 64% of females and 56% of males reported a negative impact, while 21% of females and 38% of males reported no effects. Identified negative themes were: body image, fertility-related concerns, and physical/sexual functioning.

**Discussion or Conclusions:** This study demonstrates both positive and negative effects of childhood cancer on romantic relationships, whereas effects on physical intimacy were predominantly negative. Further research is needed to inform psychosexual interventions in cancer survivorship.

#### 391 | Course and trajectories of fear of cancer recurrence in newly diagnosed head and neck cancer patients and associated psychological variables

*Esther Smit<sup>1</sup>, Jose Custers<sup>1</sup>, Robert Takes<sup>1</sup>, Judith Prins<sup>1</sup>, NET-QUBIC consortium<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Head and neck cancer (HNC) patients are vulnerable for developing high fear of cancer recurrence. In a subset of the baseline data (n = 216) of the prospective NET-QUBIC cohort study, 53% HNC patients reported high FCR following HNC diagnosis and among those 21% had lifetime anxiety or depressive disorder. This study aims to: a) document the course of FCR in the whole sample of HNC patients over time on group and individual level and b) identify the relationship between anxiety, depression, coping and self-efficacy with the course of FCR.

**Methodology or Methods:** In the complete NET-QUBIC data, baseline (n = 579) and 3 months (n = 541) and 6 months (n = 478) follow-up data of both the primary outcome FCR (Cancer Worry Scale (CWS-6), and anxiety and depression (HADS), coping (MAC) and self-efficacy (GSE) will be analyzed. The course of FCR will be analyzed using repeated measures ANOVA and individual FCR trajectories will be identified using Latent Class Growth Mixed Modeling (LCGM).

**Impact on practice or Results:** Results on the prevalence, course and trajectories of FCR from baseline up to 6 month follow-up in the total sample will be presented at the conference.

**Discussion or Conclusions:** Results of the baseline and follow-up data will show how the prevalence changes over time after diagnosis and identify in which patients FCR levels remain high. Knowledge of factors associated with high FCR will help identify vulnerable



subgroups and facilitate the identification of patients who might benefit from evidence-based FCR interventions.

### 389 | Screening for adjustment disorder in breast cancer survivors: one-year course

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**Background/rationale or Objectives/purpose:** The increase in number of cancer survivors leads to more persons dealing with the long-term complications of cancer treatment. Some survivors are not able to adequately adjust to their new situation and might develop an adjustment disorder (AD). The goal of this study is to screen for AD in breast cancer survivors (BCS), and to identify the course of screening data of AD during a period of one year.

**Methodology or Methods:** 462 female BCS were asked to fill in the Hospital Anxiety and Depression Scale (HADS) at baseline and after 3, 6 and 12 months. Screening for AD was defined as negative for AD (HADS  $\leq 10$ ), positive for AD (HADS 11–14), and positive for depression/anxiety (HADS  $\geq 15$ ). Profiles over time were a priori defined as stable negative for AD (stable low), stable positive for AD (stable AD), varying below between and above cut-offs (fluctuating AD) and stable positive for depression/anxiety (stable other disorder).

**Impact on practice or Results:** 296 participants (64.1%) filled in all HADS-questionnaires. On each moment separately, 70.3%-74.7% women screened negative for AD, 10.5%-14.9% positive for AD, and 14.2%-15.2% positive for depression/anxiety. Over time, 54.4% of BCS showed a stable low profile, 1.4% a stable AD profile, 37.5% a fluctuating profile and 6.8% a stable other disorder(s) profile.

**Discussion or Conclusions:** These results show a fluctuating course of the screening for AD over time in almost all BCS. This might suggest that a single screening moment is not optimal to detect BCS who might be in need for additional psychosocial care after cancer treatment.

### 386 | Pre-surgery factors associated with fear of cancer recurrence in people with colorectal cancer up to five years after surgery: results from the ColoREctal Wellbeing (CREW) study

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**Background/rationale or Objectives/purpose:** Colorectal cancer (CRC) survivors highlight fear of cancer recurrence (FCR) as a prominent concern. FCR is commonly linked with psychological distress, poor quality of life (QOL) and wellbeing. This presentation explores baseline psychosocial, clinical and sociodemographic factors associated with FCR in a cohort of people with CRC post-surgery.

**Methodology or Methods:** A representative cohort of 872 patients treated surgically for non-metastatic CRC consented to follow-up. Patients completed questionnaires pre-surgery, then at 3, 9, 15, 24, 36, 48 and 60 months post-surgery. FCR was assessed from 9 months using the QLACS Distress-Recurrence Subscale (DRS-QLACS) comprising 4 items, each scored 1–7. Scores 5–7 ('frequently' to 'always') were categorised as reporting a 'high level' of concern. For each participant, the number of items categorised as 'high level' were examined, where more 'high level' items indicated greater FCR. Sociodemographic, clinical/treatment and psychosocial factors associated with high levels of FCR were explored using ordinal regression analysis.

**Impact on practice or Results:** On average, 25% reported high levels of 'worry about recurrence', 16% 'worry about death', 13% 'pain as a trigger', and 7% 'pre-occupation with FCR' at each time point. Younger patients,

Duke's stage C, undergoing neoadjuvant treatment, reporting worse QOL, high anxiety levels, and low self-efficacy pre-surgery were significantly more likely to report more 'high level' items indicating greater FCR.

**Discussion or Conclusions:** Examining pre-surgery characteristics can identify those most at risk of high levels of FCR post-treatment earlier in the pathway. FCR interventions could address reducing anxiety, improving QOL and building self-efficacy to manage the consequences of CRC and its treatment.

### 385 | Patients with lymphoma using emotion-focused coping strategies are at increased risk for psychological distress

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**Background/rationale or Objectives/purpose:** Up to a quarter of patients with lymphoma experience persistent levels psychological distress. It has been suggested that the use of different coping strategies, which is highly dependent on dispositional characteristics such as personality traits, predict how patients adjust to cancer. The objectives of the current study were to investigate the association between coping strategies and psychological distress among patients with lymphoma, controlling for personality traits.

**Methodology or Methods:** A population-based sample of patients diagnosed with lymphoma, selected from the Netherlands Cancer Registry (NCR) were invited to complete a questionnaire about psychological distress (HADS), coping (MAC), and personality (BFI). Sociodemographic and clinical data were retrieved from NCR.

**Impact on practice or Results:** A total of 458 patients completed the questionnaire (51%). Patients with higher scores on emotion-focused coping strategies 'Anxious Preoccupation' (OR = 1.12, 95%CI = 1.00–1.27,  $p = 0.05$ ) and 'Helplessness/ Hopelessness' (OR = 1.54, 95%CI = 1.24–1.91,  $p < 0.01$ ) were at increased risk of psychological distress. In addition, patients with more comorbid conditions (OR = 1.55, 95%CI = 1.18–2.05,  $p < 0.01$ ) and higher scores on neuroticism (OR = 5.62, 95%CI = 2.82–11.21,  $p < 0.01$ ) were at increased risk for psychological distress.

**Discussion or Conclusions:** Patients with lymphoma using emotion-focused coping strategies are at increased risk for psychological distress. In emotion-focused coping strategies attention is directed towards the psychological or emotion experience rather than appraising and problem-solving during the stressful situation. Interventions based on cognitive behavioral therapy that combine emotion, cognition and behavior may help these patients to more effectively appraise and cope with the stressful situation of being diagnosed with cancer.

### 373 | Cumulative financial stress as a potential risk factor for cancer-related fatigue among prostate cancer survivors

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**Background/rationale or Objectives/purpose:** Studies increasingly suggest links between financial stress among cancer survivors and poorer psychological wellbeing and quality-of-life. Tentative data is emerging on financial hardship and cancer-related side-effects. We investigated - for the first time - associations between financial stress and cancer-related fatigue among prostate cancer survivors.

**Methodology or Methods:** 3348 prostate cancer survivors who were 2–18 years post-diagnosis and had been identified through two population-based cancer registries covering the Republic of Ireland and Northern Ireland, completed a postal questionnaire. Cancer-related fatigue was measured by the fatigue subscale of EORTC QLQ-C30. Financial stress was assessed as household ability to make ends meet (i) pre-diagnosis and

(ii) at questionnaire completion (post-diagnosis). Multivariable logistic regression was used to relate financial stress to clinically important cancer-related fatigue (fatigue subscale score  $\geq 39$  of a possible 100).

**Impact on practice or Results:** Of participants, 10.9% reported pre-diagnosis financial stress only, 12.9% post-diagnosis stress only and 11.0% both pre- and post-diagnosis stress (cumulative stress); 19.1% reported clinically important cancer-related fatigue. After controlling for confounders, survivors reporting cumulative financial stress were significantly more likely to have cancer-related fatigue (odds ratio [OR] = 5.24, 95% confidence interval [CI] 3.86–7.12,  $p$

**Discussion or Conclusions:** Financial stress may be an independent risk factor for cancer-related fatigue. These findings suggest there may be benefits in targeting interventions for reducing cancer-related fatigue towards survivors with financial stress, or developing strategies to reduce financial stress.

### 365 | Randomized Clinical Trial of FORT: A fear of cancer recurrence management intervention for women with breast or gynecological cancer

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**Background/rationale or Objectives/purpose:** Background: Efficacy testing of a theoretically based fear of cancer recurrence (FCR) intervention using six-weekly, two hours cognitive-existential group sessions. Hypotheses: Breast (BC) or gynecological (GC) cancer survivors participating in the study intervention will have 1) lower levels of FCR and (2) show improvements in secondary psychosocial outcomes functioning. Improvements in all outcome measures to be maintained over a six-month period following end-of-intervention.

**Methodology or Methods:** Methods: BC or GC survivors who completed treatment with scores above clinical cutoff on the FCR Inventory severity subscale and IES at screening made up the groups in this multisite FCR intervention (FORT) study. Random allocation was to either the FORT intervention (cognitive reframing, managing uncertainty and worries, coping skills building, facing existential realities and building new life priorities) or control group (Living Well with Cancer: general health and coping skills, transitioning to healthy state of mind). Participants completed measures at pre (T1), post (T2), and 3 and 6 months post-intervention. The primary outcome was FCR.

**Impact on practice or Results:** Results: Of the 263 assessed for eligibility from three Canadian sites from two provinces, 149 consented with 70 randomized to the FORT intervention and 79 to the control group. FORT participants had clinically and statistically greater improvements than control participants from T0 to T1 on FCRI total (P.026). Results from all timeline and on secondary measures to be analyzed and presented.

**Discussion or Conclusions:** Conclusion: Individuals randomized to the FORT intervention in comparison to the structurally equivalent control (LWWC) group experienced marked improvement in their FCR level from baseline to immediately after the intervention.

### 364 | Quality of Life and health status in older people with colorectal cancer: Findings from the ColoRECTal Wellbeing (CREW) cohort study

*Rebecca Foster<sup>1</sup>, Amanda Cummings<sup>1</sup>, Lynn Calman<sup>1</sup>, Natalia Permyakova<sup>1</sup>, Jacqueline Bridges<sup>1</sup>, Theresa Wiseman<sup>1,2</sup>, Teresa Corbett<sup>1</sup>, Claire Foster<sup>1</sup>, The CREW Study Advisory Committee<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Colorectal cancer (CRC) is the third most common cancer worldwide and has a median age of onset of 65–70. We describe the clinical, treatment and sociodemographic features of older CRC survivors in the CREW cohort study. Our purpose was to identify those older survivors most at risk of poor Quality of Life (QoL) and poor health status, up to five years after treatment.

**Methodology or Methods:** CREW is a UK based, prospective, longitudinal cohort study investigating factors associated with recovery of health and wellbeing in the five years following CRC surgery. Questionnaires, including psychosocial measures and sociodemographic questions, were completed by participants pre-surgery, then at 3, 9, 15, 24, 36, 48 and 60 months post-surgery. Clinical details were also collected. Multivariable regression analyses were conducted to identify pre-surgery risk factors associated with poor QoL (QLACS) and health status (EQ-5D: presence of problems in five domains) in older survivors.

**Impact on practice or Results:** 501 participants aged 65 or over completed baseline questionnaires; 226 completed questionnaires 5 years later. The regression models showed an association between low confidence to manage the effects of cancer and its treatment and poorer QoL and health status in the five years following CRC surgery. Poorer QoL was also associated with being over 80, inadequate perceived social support and presence of limiting comorbidities.

**Discussion or Conclusions:** Identifying older individuals at greater risk of poor QoL and health status following curative intent treatment for CRC is important in developing interventions to improve outcomes. Interventions will be most effective when targeted at individuals who will benefit most from them.

### 357 | Writing between the lines: A secondary analysis of unsolicited narratives from cancer survivors regarding their fear of cancer recurrence

*Jacqueline Galica<sup>1</sup>, Christine Mahieu<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Fear of cancer recurrence (FCR) is a common concern among cancer survivors. In a recent cross-sectional survey study examining FCR ( $n = 1,002$ ), 44 survivors provided unsolicited narratives, either as comments written in questionnaire margins or as accompanying notes, to describe their FCR experiences. The goal of this secondary analysis was to understand how these unsolicited narratives may contribute to our understanding of FCR, its standardized assessment, and intervention.

**Methodology or Methods:** Demographic and clinical profiles of persons who did/did not provide narratives were generated using SPSS, and differences in profiles and level of FCR were explored between those who did/did not provide narratives. An interpretive description analysis was used to examine narratives associated with items on the measure and the collective data were examined for the emergence of themes.

**Impact on practice or Results:** Few profile differences were found between those who did/did not provide unsolicited narratives; however, the overall mean FCR score of those who provided narratives was significantly lower. Of those who provided narratives, their level of FCR was equally categorized as clinically- and not clinically-significant. Results identified which items on the measure garnered most narratives, participant responses to these items, and overall themes from the collective data.

**Discussion or Conclusions:** Given the increasing attention to FCR assessment and intervention, this study provides unique insights into which survivors may benefit from more expressive interventions to cope with FCR. Suggested implications for FCR assessment and intervention will be discussed.

### 352 | When “A Headache is Not Just a Headache”: A Qualitative Examination of Parent and Child Experiences of Pain After Childhood Cancer

*Perri Tutelman<sup>1,2</sup>, Christine Chambers<sup>1,2</sup>, Robin Urquhart<sup>1</sup>, Conrad Fernandez<sup>2,1</sup>, Lauren Heathcote<sup>3</sup>, Melanie Noel<sup>4</sup>, Annette Flanders<sup>2</sup>, Gregory Guilcher<sup>5,4</sup>, Fiona Schulte<sup>4,5</sup>, Jennifer Stinson<sup>6</sup>, Julia MacLeod<sup>7</sup>, Maya Stern<sup>8</sup>*

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**Background/rationale or Objectives/purpose:** Today over 80% of children diagnosed with cancer are expected to survive. Despite the high prevalence of pain associated with the diagnosis and treatment of childhood cancer, there is a limited understanding of how having cancer shapes children's experience and meaning of pain after treatment has ended. In this presentation, Ms. Tutelman will share new data from a qualitative study that explored childhood cancer survivors' (CCS') and their parents' experiences of pain.

**Methodology or Methods:** Twenty semi-structured interviews were completed with CCS (50% female; mean age = 13.20 years, range = 8–17 years) and their parents (90% mothers). Data were analyzed using Interpretive Phenomenological Analysis.

**Impact on practice or Results:** Analyses revealed three superordinate themes present in the data: (1) pain is a changed experience after childhood cancer; (2) new or ambiguous pains may be interpreted by CCS and parents as a threat of disease recurrence, late effects, or a secondary cancer; and (3) pain interpretation occurs within the broader context of how CCS and parents appraise their cancer experience. Parents generally appraised their child's cancer and pain as more threatening and were influential in guiding their child's interpretations.

**Discussion or Conclusions:** The cancer experience played an important role in shaping CCS' and their parents' experience and interpretation of pain in survivorship. This study provides novel data to inform the development and refinement of new and existing conceptual models of pain and symptom perception after cancer. The results also point to key areas for future investigation and clinical intervention.

### 342 | UNMET NEEDS AND FUNCTIONING OF METASTATIC GASTRIC CANCER PATIENTS RECEIVING PALLIATIVE CHEMOTHERAPY

*Jiyeon Lee<sup>1</sup>, Sun Young Rha<sup>2</sup>, Hyo Jin Lee<sup>1</sup>, Misook Jung<sup>1</sup>, Eun Young Park<sup>1</sup>, Hyun-E Yeom<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Considerable unmet needs are expected to occur throughout cancer journey of metastatic gastric cancer patients which contribute to patients' functioning. The purpose of this study was to understand the relationship between unmet needs and functioning of metastatic gastric cancer patients receiving palliative chemotherapy.

**Methodology or Methods:** A descriptive correlational study was conducted with 91 metastatic gastric cancer patients. The Supportive Care Needs Survey 34 (SCNS-34) and the European Organization of Research and Treatment of Cancer Quality of Life Questionnaire C-30 (EORTC QLQ C-30) were used. Descriptive statistics, Pearson correlation, and multiple regression analysis were employed to analyze the data.

**Impact on practice or Results:** Among the unmet needs, health system and information unmet needs ( $44.04 \pm 23.79$ ) were ranked as the highest and the most prevalent unmet need was “having access to professional counselling” (54.9%). Being informed about cancer (51.6%) and having one member of hospital staff with whom to talk about all as-

pects were the next prevalent unmet needs (50.5%). Psychological and physical and daily living unmet needs demonstrated significant associations with all functional domains (physical, role, emotional, cognitive, and social) ( $p < .05$ ). Emotional functioning demonstrated significant correlations with all unmet need domains, among which psychological and physical and daily living unmet needs demonstrated significant contribution ( $R^2 = 42.3\%$ ,  $p < .001$ ).

**Discussion or Conclusions:** Metastatic gastric cancer patients expressed highest unmet needs in health system and information domain, and expressed need for access to professional counselling. Considering significant contribution of psychological and physical unmet needs to patients' functioning, proactive identification of unmet needs and providing supportive care are essential.

### 341 | An Investigation of Fear of Cancer Recurrence on Breast Cancer Patients Who Completed Treatment

*Aslı Eyrenci<sup>1</sup>, H. Özlem Sertel Berk<sup>2</sup>*

<sup>1</sup>Maltepe University, Istanbul, Turkey; <sup>2</sup>Istanbul University, Istanbul, Turkey

**Background/rationale or Objectives/purpose:** The aim of this study was to investigate and clarify the concept of fear of cancer recurrence (FCR) along with its antecedents, predictors, maintaining factors and the consequences, and its relationship with health anxiety (HA) and other fears related to cancer in a group of breast cancer patients.

**Methodology or Methods:** For this purpose, a mixed method was used where qualitative and quantitative data were obtained from a total of 35 subjects, including breast cancer survivors (Survivors), healthy individuals who had mothers diagnosed with breast cancer (Healthy Relatives) and healthy individuals who had no family history of breast cancer (Healthy Women). A semi-structured in-depth interview technique was used for the qualitative data. Fear of Cancer Recurrence Inventory and Health Anxiety Scale were administered for the quantitative analysis.

**Impact on practice or Results:** The results of the quantitative data analysis revealed that mean level of FCR changed between low to moderate in Survivors. Furthermore, high levels of FCR was associated with linking cancer and recurrence to death, lower belief in treatment control, more frequent and long lasting recurrence thoughts and more emotion-focused coping strategies used for coping with recurrence thoughts. HA level was the highest in Healthy Relatives and the lowest in Survivors.

**Discussion or Conclusions:** When the qualitative and quantitative data were evaluated together, it was found that different aspects of FCR differed from other fears that were related to cancer, and that FCR could be associated with HA. In addition, some common features and differences between HA and FCR and cancer fear were also observed.

### 339 | Leveraging mHealth to examine Chronic Pain in the Childhood Cancer Survivor Study

*Nicole Alberts<sup>1</sup>, Kevin Krull<sup>1</sup>, Wendy Leisenring<sup>2</sup>, Todd Gibson<sup>1</sup>, Jeffrey Olgin<sup>3</sup>, Lindsay Jibb<sup>4</sup>, Kathryn Birnie<sup>5</sup>, Jennifer Stinson<sup>4</sup>, Gregory Armstrong<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Exposure to cancer-directed therapies in childhood often results in medical and psychological late effects, including clinically significant pain. Despite this, pain, and in particular chronic pain, remains understudied relative to other late effects. Leveraging an integrated mobile health (mHealth) and ecological momentary assessment (EMA) approach, the primary aim of the current study was to estimate the prevalence and nature of chronic pain among long-term survivors of childhood cancer.



**Methodology or Methods:** Potential participants included a random sample of 700 adult survivors of childhood cancer from the Childhood Cancer Survivor Study (CCSS), a multi-institutional cohort of 5-year survivors of childhood cancer, who were invited to download the CCSS Eureka app to complete baseline measures of chronic pain and related constructs. Participants next completed daily app-based pain assessments over the course of two weeks.

**Impact on practice or Results:** Of the 700 survivors invited, 256 (37%) have registered on the app, and 234 (33%) have consented to study to date. Preliminary findings pertaining to the prevalence and nature of chronic pain among survivors will be presented. Lessons learned regarding the feasibility of utilizing an app-based EMA approach within a large scale cancer survivor cohort will also be discussed.

**Discussion or Conclusions:** mHealth and EMA can be used together to study chronic pain within large survivorship cohorts. However, limited participation rates and participation bias may be limitations. Clinical implications of the study findings and future research directions for the examination of chronic pain in survivors of childhood cancer, including utilization of technology-based approaches, will be described.

### 338 | The FCR-1: The Psychometric Properties of a Single-Item Measure of Fear of Cancer Recurrence

*Lauren Rudy, Christine Maheu, Celine Gelinas, Annett Korner  
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**Background/rationale or Objectives/purpose:** Fear of cancer recurrence (FCR), characterized by the fear, worry, or concern that cancer will come back or progress, is identified by cancer survivors as one of their most prominent unmet needs. Current measures of FCR tend to be long, complex, and burdensome for survivors to complete. The goal of the present study is to develop and validate a one-item measure of FCR.

**Methodology or Methods:** The ability of the FCR-1 to detect change in FCR over time was analyzed using a repeated-measures ANOVA and paired-samples t-tests. Pearson correlations were used to measure the concurrent, convergent and divergent validity of the FCR-1, and a ROC analysis was conducted to determine an optimal clinical cut-off score.

**Impact on practice or Results:** The FCR-1 was found to be responsive to change in FCR over time. It demonstrated concurrent validity with the FCRI, our reference measure ( $r = 0.395$ ,  $p = 0.010$ ), and convergent validity with the Mishel Uncertainty in Illness Scale ( $r = 4.93$ ,  $p = .001$ ) and the Reassurance Questionnaire ( $r = .325$ ,  $p = .044$ ). Divergent validity was confirmed when the FCR-1 did not significantly correlate with unrelated measures. A ROC analysis pinpointed an optimal clinical cutoff score of 45.0.

**Discussion or Conclusions:** The FCR-1 is a promising tool that can be incorporated in clinical and research settings. Due to its brevity, the care needs of highly-distressed patients can be met quickly and efficiently. In research setting, the FCR-1 can reduce the cognitive burden experienced by survivors. As well, the FCR-1 can be administered and understood by individuals who are not experts in scale interpretation, such as nurses, primary care physicians, and counselors.

### 303 | Returning to work following cancer: emotional and practical needs of cancer survivors and managers

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**Background/rationale or Objectives/purpose:** To identify the needs of cancer survivors and managers during return to work.

**Methodology or Methods:** 10 cancer survivors who had returned to work following cancer and 14 managers who had supported cancer survivors return to work completed semi-structured interviews about their experiences and needs in the return to work process. Interviews took between 30–60 minutes and were conducted by phone or in person. Data were analysed using thematic analysis.

**Impact on practice or Results:** Cancer survivors identified the following emotional needs in relation to returning to work: emotional support, socialisation, and regaining their sense of self and normality. Practical needs included survivors' financial needs, the need for flexibility and appropriate accommodations in the workplace, as well as for open and professional communication. Importantly, cancer survivors who reported having their emotional and practical needs met, remained in the workplace.

Similarly, managers' needs were both practical (e.g. flexibility in policies and work arrangements, education about cancer and its treatment) and emotional (e.g. the need to provide support and to receive support from others). Managers highlighted the challenges associated with balancing the needs of the organisation, such as productivity, with the personal needs of the cancer survivor, such as physical and psychological well-being.

**Discussion or Conclusions:** Many factors need to be considered to successfully navigate the return to work process. Results from this study are informing the development of a tool to support managers and cancer survivors and promote a successful return to work process that meets the practical and emotional needs of survivors, managers and the organisations in which they work.

### 296 | Bridge to Next Steps: Evaluation of a Transition to Survivorship Program

*Kristin Bingen<sup>1</sup>, Jennifer Hoag<sup>1</sup>, Lynnette Anderson<sup>1</sup>, Sherilynn Chan<sup>1,2,3</sup>,  
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**Background/rationale or Objectives/purpose:** Pediatric and adolescent and young adult (AYA) cancer survivors and caregivers require survivorship education at the end of treatment (Karst et al., 2018). We developed a 2-visit transition program with one visit before and one after treatment completion, consisting of education, provision of treatment and follow-up information, and psychosocial consultation. This study aimed to evaluate program acceptability and efficacy for reducing distress and anxiety and increasing perceived preparedness.

**Methodology or Methods:** This pilot study utilized a prospective, repeated measures design. All survivors and their caregiver within 8 weeks from the end of treatment were eligible. Participants completed self-report measures assessing distress (Distress Thermometer; DT), anxiety (PROMIS anxiety or emotional distress), and preparedness (age >14 years) prior to Visit 1 and again at 5+3 months after Visit 2, along with acceptability survey.

**Impact on practice or Results:** Twenty-six survivors (57.1% male) and 22 caregivers participated. Most AYAs (89%) and all caregivers endorsed the transition program to be somewhat to very helpful, and the content to be somewhat to very acceptable. Paired sample t-tests indicated decreased caregiver distress (DT Mean difference = 1.45; SD = 2.14,  $p = 0.007$ ) and anxiety (PROMIS Mean difference = 5.61; SD = 8.76,  $p = 0.008$ ) from pre- to post-intervention. Survivors' and caregivers' preparedness scores increased from pre- to post-intervention; however, mean difference scores were not statistically significant. There were no significant differences in survivors' distress or anxiety from pre- to post-intervention.

**Discussion or Conclusions:** Results provide support for survivorship education and psychosocial consultation early in the transition process. Effective transition interventions will lead to positive adjustment and potentially improved follow-up adherence.

## 286 | Predictors of return to work in Chinese cancer survivors

*Serana Chun Yee So<sup>1,2</sup>, Wendy WT Lam<sup>1,2,3</sup>, Richard Fielding<sup>1,2</sup>*

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**Background/rationale or Objectives/purpose:** Advancement in treatment outcomes and improvement in prognosis has led to an increasing number of working-age cancer survivors facing return to work after completing primary treatment. Return to work after cancer is a complicated process that is influenced by physical, psychological, demographic and job characteristics. Very little research in this area exists outside of Western cultural settings. Therefore we implemented a study to identify factors influencing successful return to work in Chinese cancer patients.

**Methodology or Methods:** 650 Chinese cancer survivors who had completed cancer treatment within 6 months and were employed before cancer diagnosis were recruited. Participants completed a baseline survey assessing physical symptom distress such as fatigue and pain; job characteristics (job nature, working hours, full-time/ part-time); demographic factors and clinical characteristics. We then assessed return to work status up to two-year post-treatment. Cox regression was performed to assess predictors of return to work.

**Impact on practice or Results:** At baseline, 206 patients (32%) had returned to work. The mean return to work time after cancer diagnosis was 4 months. Cox regression showed that Chinese cancer survivors who were at younger age (OR: 0.91;CI:0.90–0.93); more educated OR:1.42;CI:1.02–2.07); and reported less physical fatigue (OR: 0.92;CI:0.89–0.95) and lower pain intensity (OR: 0.93;CI:0.85–0.98) were more likely to return to work at two-year post-treatment regardless of their job characteristics.

**Discussion or Conclusions:** Unresolved physical symptoms prohibited Chinese cancer survivors from returning to work. The findings highlight the importance of timely symptoms management and the imperative need of providing vocational rehabilitation to Chinese cancer survivors.

## 282 | Integrating psychosocial survivorship plans in women undergoing (neo) adjuvant therapy for early stage breast cancer

*Joanne Mortimer, Sharla Moore, Stephen Miller, Lauren Creel, Richard Obenchain, Matthew Loscalzo, Karen Clark*

*City of Hope, Duarte, USA*

**Background/rationale or Objectives/purpose:** The Commission on Cancer in the US endorses a survivorship care plan for cancer survivors that includes: a treatment summary, assessment of symptoms, and a plan for managing those symptoms and follow-up.

**Methodology or Methods:** At completion of (neo) adjuvant chemotherapy or after initiation of endocrine therapy, women completed Survivorship SupportScreen®, a tablet-based series of 31 biopsychosocial questions regarding treatment side effects and scored each on a Likert scale of 0–5.

**Impact on practice or Results:** To date 261 women have complete the Survivorship SupportScreen® of whom 29.2% were White non-Hispanic, 36.3% White Hispanic, 24.9% Asian/Pacific Islanders, 5.4% African American, and 4.2% unknown. The most common biopsychosocial items rated as high distress (moderate, severe and very severe) were: Fatigue (40.1%), Feeling anxious or fearful (37.4%), Sleeping (34.2%), Not being physically active (31%) and Worry about the future (30.8%). Many symptoms were related to age. Vaginal dryness was endorsed by 39.7% age 40–65, 29.7% age > 65 years and 23% < 40. Frequent urination was reported by 40.5% age >65 compared 29.3% age 40–65 and 15.4% < 40.

**Discussion or Conclusions:** Despite the fact that most of these women are likely cured of their cancer, the negative lingering sequelae are under appreciated. Treating oncologists are responsible for, but seldom prepared to support the problems that patients have as they transition to survivorship. We have demonstrated that it is feasible to screen patients as they transition from active care to survivorship in order to develop programs to meet their needs.

## 278 | Relapsed or Refractory Multiple Myeloma (RRMM) patients' and carers' experience and perspectives on treatment: a qualitative study

*Jayne Galinsky<sup>1</sup>, Emily Boxell<sup>2</sup>, Cicely Kerr<sup>3</sup>, Nicola Trevor<sup>3</sup>,*

*Keith Stubbs<sup>3</sup>, Angela Rylands<sup>4</sup>, Angela Carter<sup>4</sup>, Jaqui Bernarde<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** Myeloma is a relapsing and refractory rare blood cancer. Even after successful treatment, patients eventually relapse and become ill with myeloma again.

Little is known about how patients experience illness and survivorship in the relapsed/refractory multiple myeloma (RRMM) setting. This qualitative study explored the experiences and perspectives of people living with RRMM.

**Methodology or Methods:** Semi-structured interviews were conducted in the UK with 13 RRMM patients and nine carers (partners of RRMM patients) to explore their experiences and treatment priorities. Interviews were transcribed and data analysed using thematic analysis.

**Impact on practice or Results:** RRMM patients and carers experienced a lack of control and subsequent anxiety about their futures due to the uncertain and unpredictable nature of relapse, subsequent treatment options, and perceptions of reduced treatment options. Fatigue and weakened immune system restricted work, family, leisure, and social activities.

Carers had significant involvement in managing treatment, in some cases administering treatment injections at home, thus experiencing their own physical (sleep, cognition, fatigue), financial and emotional impacts from living with RRMM.

Patients and carers prioritised treatments that are effective (reduce disease markers, achieve remission/longer remission, extend life) with minimal impact on life and quality of life (prioritising treatments taken at home, fewer hospital visits, oral treatments, and treatments with a shorter duration). Carers also wanted treatments to halt the need for further treatment and bring stability to their lives.

**Discussion or Conclusions:** This study describes the lived experience of RRMM, identifies key unmet needs and treatment priorities for patients and carers in the RRMM setting.

## 277 | A five year longitudinal study of people living with and beyond colorectal cancer: key findings from the ColoRECTal Well-being (CREW) study

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**Background/rationale or Objectives/purpose:** The ColoRECTal Well-being (CREW) study is the first study to prospectively recruit a representative sample of colorectal cancer (CRC) patients, carry out the first comprehensive assessment pre-treatment and follow up longitudinally over five years to explore the impact of treatment on health and wellbeing.

**Methodology or Methods:** CRC patients from 29 UK cancer centres received questionnaires at baseline (pre-surgery), 3, 9, 15, 24, 36, 48 and 60 months. Quality of life (QOL), self-efficacy, mental health, social support, affect, socio-demographics, clinical and treatment characteristics were assessed. Data were analysed using multivariate statistical techniques.

**Impact on practice or Results:** A representative cohort of 872 non metastatic CRC patients participated. Around 30% had poor psychosocial outcomes and this persisted to 5 years. Baseline psychosocial factors (particularly self-efficacy and depression) were more important than disease stage and location of tumour in determining those most likely to have health and wellbeing problems over the next 5 years. Risk factors for poor outcomes throughout follow up were depression, low self-efficacy, a lack of perceived social support, comorbidities that limit an individual's typical daily activities and unmet needs.

**Discussion or Conclusions:** CREW provides robust evidence that psychosocial factors, such as self-efficacy, are important predictors for longer term wellbeing and health outcomes of CRC patients. We call for early assessment and intervention, including assessment of depression and confidence to manage illness related problems and limiting co-morbidities, from diagnosis onwards. Early assessment would identify those most likely to need support and has the potential to reduce need and improve outcomes throughout treatment and beyond.

## 274 | One-session Distress Management Survivorship Program For Prostate Cancer Patients Who Received Radiotherapy In The Costa Rican Public Healthcare System

*Francisco Arturo Brenes Castillo<sup>1</sup>, María Luisa Rebolledo García<sup>2</sup>, Gloriana Rodríguez Aráuz<sup>1</sup>, Manuel Solano Beauregard<sup>1</sup>, Rodbin Campos Lobo<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Costa Rica has a public healthcare system which treats diverse diseases, such as cancer. Cancer is the second leading cause of death for Costa Ricans. From the different types of cancers, prostate cancer has the highest incidence and death rate among Costa Rican men. Therefore, many men withstand life-long consequences from oncological treatments.

**Methodology or Methods:** Before 2019, there was no psychological program that addressed prostate cancer patients in Costa Rica's healthcare. From a biopsychosocial perspective, chronic diseases are intervened multidisciplinary. Consequently, 120 patients who received radiotherapy in 2018 were cited from February 2019 in groups of fifteen to join a one session two-hour group therapy at a third level public hospital. Patients were provided with psychoeducation about their medical condition and emotional distress, peer support, and distress management techniques. Results were assessed with the Distress Thermometer and through patients' opinions.

**Impact on practice or Results:** There was no significance between the pre and post-intervention measurements from the Distress Thermometer ( $p > 0.05$ ). Participants described that they: learned aspects about their oncological disease; were able to openly discuss topics like sexuality and masculinity that are socially taboo; heard motivational speeches from peers; and were given useful distress management techniques like progressive muscular relaxation. Participants communicated the need of receiving a group setting before treatment, and to be willing to participate subsequently.

**Discussion or Conclusions:** The program pioneered the development of prostate cancer related psychological interventions at the Costa Rican national healthcare system. Patients reported experiencing emotional consequences before, during and after treatment; psychological interventions should aim to address these stages.

## 240 | Mental Health Outcomes in Men with a History of Prostate Cancer Diagnosis: Exposing a silent epidemic

*Gabriela Ilie, Robert D.H. Rutledge*

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**Background/rationale or Objectives/purpose:** Prostate cancer (PC) patients with poor mental health report poorer treatment outcomes,

decreased quality of life, increased hospitalization rates and increased mortality. According to the Canadian Community Health Survey, rates of mental health problems in the population range between 2.7% to 4.7%, while in the cancer populations, they range between 16% to 24%. This study examined the burden of mental health issues in a population-based cohort of PC survivors in one of three Maritime provinces in Canada and its association with current urinary function, sleep and intimacy/sexuality issues.

**Methodology or Methods:** A total of 383 men (Median age = 68) with a history of PC completed an on-line survey between 2017–2018, assessing patient reported multidimensional quality of life outcomes. The primary outcome was a highly validated assessment of mental health disorder, Kessler Psychological Distress Scale (K10). Predictors were assessed using notably validated questionnaires (e.g., International Prostate Symptom Score).

**Impact on practice or Results:** A total of 19.1% men scored positive for current mental health issues. More than half of the sample (56.9%) reported mild, 36.3% moderate and 6.8% severe urinary problems. The odds ratios were 3.36 times higher (95% CI: 1.77; 6.38) for presenting with clinical mental health issues among men with moderate to severe urinary problems, compared to their counterparts. Odds ratios for screening positive for mental health problems among survivors with sleep problems and current worries about intimacy and sexuality were 2.47 and 2.23 higher, respectively, compared with their counterparts.

**Discussion or Conclusions:** Results indicate that multilevel interventions addressing the functional and psychosocial needs of PC survivors are warranted.

## 178 | Living with a Central Nervous System (CNS) Tumor: Exploring Patient-Related Outcomes (PROs) of Long-Term Survivors (LTS)

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**Background/rationale or Objectives/purpose:** Purpose: Adult CNS tumors are associated with both disease- and treatment-related morbidity and mortality, but exploration of the sequelae in LTS has not been undertaken previously. Examination of PROs of LTS may offer insight into positive prognostic indicators and what patients experience in survivorship.

**Methodology or Methods:** Methods: Demographic data and PROs (MDASI-Brain Tumor (BT), -Spine (SP), PROMIS Depression and Anxiety Short-Forms, EQ-5D) were collected from LTS (> 5 years from initial diagnosis). Descriptive statistics were used to report results.

**Impact on practice or Results:** Results: 132 patients (58% males) with a median age of 49 years (range, 22–81) and median follow-up of 117 months were included in the sample. Tumors were mostly supratentorial (79%) with 12% infratentorial and 8% spine. High-grade gliomas were most common (56%) with a good representation of very rare tumors (41%). Most patients had a gross total resection at diagnosis, with subsequent radiation and chemotherapy, and 33% had at least one recurrence. Most patients were not on active treatment. BT patients reported lower total symptom burden, with fatigue, difficulty remembering, and distress the most common moderate-severe symptoms, while fatigue, disturbed sleep, and numbness were common in SP patients. Moderate-severe mood disturbance was common in this population (anxiety, 14%; depression, 18%), which mirrored the most impacted dimension on the EQ-5D (Anxiety/Depression), with 63% reporting at least 1 EQ-5D dimension affected.



**Discussion or Conclusions: Conclusion:** Despite stable disease, LTS report significant symptom burden and functional limitations. By understanding the current health status & symptom burden in LTS, targeted interventions can be explored to predict, prevent, or reduce these effects.

### **176 | Psychosocial status and survivorship following HCT: The practice of integrated care, symptom monitoring, and active coping**

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**Background/rationale or Objectives/purpose:** Physical and psychological recovery from hematopoietic stem cell transplantation (HCT) is a lengthy process. Innovative survivorship clinics can monitor this trajectory. The purpose of this study was to review the psychosocial dimension of HCT survivorship care, including distress, depression, coping strategies, and other post-HCT concerns.

**Methodology or Methods:** Chart reviews were completed for patients ( $n = 85$ , 25–78-years, 2–27 years post-HCT) who participated in a comprehensive assessment. The PHQ-2, PHQ-9, as needed, and Distress Thermometer were administered along with a semi-structured interview conducted by a psychologist in clinic.

**Impact on practice or Results:** Patients reported distress ( $M = 2.4$ ,  $SD = 2.3$ ) and depressive (PHQ-2,  $M = .6$ ,  $SD = 1.3$ ) symptoms, with 7 individuals endorsing significant depressive symptoms (PHQ-2 score  $>3$ ) that merited administering the PHQ-9 ( $M = 11.1$ ). There was no difference in distress level for patients  $<5$  years post-transplant ( $M = 2.3$ ,  $SD = 1.8$ ) compared to 6+ years post ( $M = 2.6$ ,  $SD = 2.8$ ). Eight patients were referred for counseling and three followed through with recommendation. In the clinical interview, 64.7% reported not exercising, 75% did not maintain a healthy diet, 50.6% experienced memory concerns, 15.3% had sexual concerns, 32.9% experienced fear of cancer recurrence, and 23.5% reported depressive symptoms. Patients engaging in only passive coping ( $M = 2.8$ ,  $SD = 2.0$ ) and passive plus active coping ( $M = 3.3$ ,  $SD = 2.8$ ) displayed significantly higher distress than individuals engaging in active only ( $M = 1.9$ ,  $SD = 2.0$ ,  $p = .013$ ).

**Discussion or Conclusions:** Psychological symptoms persisted years post-HCT. The use of active coping facilitates post-transplant survivorship. Routine monitoring by a mental health professional, integrated into an HCT clinic, could prove useful for reducing post-transplant distress with emphasis on fostering active coping.

### **162 | Feasibility trial of monitoring psychosocial outcomes in prostate cancer through a registry, and psychosocial predictors of quality of life at 6-, 12- and 24- months post diagnosis**

*Kerry Ettridge<sup>1,2</sup>, Kathleen Wright<sup>1,2</sup>, Suzanne Chambers<sup>3,4</sup>, Paul Scuffham<sup>4</sup>, Nadia Corsini<sup>5</sup>, Sue Evans<sup>6</sup>, Kim Moretti<sup>7,5</sup>, David Roder<sup>5</sup>, Caroline Miller<sup>7,8</sup>*

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**Background/rationale or Objectives/purpose:** Minimum priority patient reported outcome measures are administered routinely through some existing prostate cancer registries, and typically collect minimum data on physical functioning and Quality of Life (QoL). This study aimed to develop and trial an acceptable and valid suite of tools and methodology to monitor additional self-reported psychosocial outcomes in men with prostate cancer.

**Methodology or Methods:** A cross-sectional study (via postal survey) of men with prostate cancer at approximately 6-, 12- and 24-months post-diagnosis ( $n = 160$ ;  $n_{\text{total}} = 480$ ) was undertaken through the South Australian Prostate Cancer registry. Surveys assessed quality of life (AQoL-6D), physical functioning (EPIC-26), distress (K10), decisional conflict (DCS), fear of recurrence (MAX-PC) and decisional regret (DRS).

**Impact on practice or Results:** A response rate of 58% was achieved ( $n = 276$ ), which was stable across time points, yielding at least 94% complete data for survey items, with the exception of sexual and urinary items (67–76% complete). Hierarchical logistic regression analysis of QoL (low QoL = 1, moderate/high QoL = 0), indicated higher distress was significantly associated with lower QoL ( $OR = 1.37$ ,  $CI:1.16-1.61$ ,  $p$

**Discussion or Conclusions:** Adequate response and data completeness indicate acceptability of the monitoring system to consumers, with some reluctance to disclose sensitive information. Both distress and physical function appear to be significant predictors of QoL during the first two years post-diagnosis.

### **153 | Fathers' and Sons' Communication Behaviors in Response to Prostate Cancer (PCa) and Familial Risk: Motivations, Challenges, and Approaches in the PSA Era**

*Camella Rising*

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**Background/rationale or Objectives/purpose:** Scientific advancements in PCa have provided diagnosed fathers and sons an increased number and diversity of PCa topics to discuss. However, guiding theoretical frameworks suggest father-son interactions may be challenged or facilitated by deeply embedded cultural factors, such as generational, masculine, and family communication norms. The aim of this study was to explore diagnosed men's perceptions of father-son PCa communication in their role as father and as son.

**Methodology or Methods:** Diagnosed men ( $n = 182$ ) completed an online survey. Survey measures included perceived openness about PCa (self and other; single items) and several constructs measured with validated scales: perceived relational openness, masculine identities in chronic disease, and enacted social support. Forty-seven men also participated in interviews.

**Impact on practice or Results:** Quantitative and qualitative analyses revealed men perceive their openness about PCa as greater than both their non-diagnosed sons' and their deceased diagnosed fathers'. Relational openness, perceived openness of the other about PCa, and being from an elevated-risk family had the strongest influences on men's openness about PCa. However, openness/avoidance differed by topic (e.g., screening, physical effects). Prominent communication challenges were individual differences (e.g., availability, age, emotional self-reliance). Helpful communication approaches included modeling an action approach to self-care, providing social support, being direct, and keeping topics factual. Sparing dialogue, especially avoiding disclosure, was usually perceived as unhelpful and sometimes contributed to relational tensions.

**Discussion or Conclusions:** PCa is a family-centered experience, therefore care and prevention should be approached in this manner across the lifespan of individuals and families. Findings will be used to develop a father-son communication intervention study.

### **152 | Securing routes to recovery with ROPE – Recovery Orientated Practice and Emphasis: findings from a national evaluation of survivorship services**

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**Background/rationale or Objectives/purpose:** The Transforming Care after Treatment programme in Scotland (TCAT), funded by Macmillan

Cancer Support, oversees the implementation of 25 different local approaches to achieving 'good survivorship.' The overall evaluation aimed to identify key implementation lessons, identify effective models of care and establish key principles of successful reform, system development and practice enhancement.

**Methodology or Methods:** Edinburgh Napier University conducted the national evaluation (2014–2018). A mixed method, longitudinal approach was taken that included three annual surveys of national and local programme stakeholders, pre- and post-project focus group discussions with local projects ( $n = 24$ ), interviews with practitioners ( $n = 25$ ) and patients ( $n = 30$ ). Thematic synthesis of the findings from local project evaluations ( $n = 25$ ) complemented analysis.

**Impact on practice or Results:** The national evaluation demonstrated the need for early and sustained emphasis on 'good survivorship'. The benefits of this being introduced at diagnosis and woven throughout treatment, after care and living well beyond cancer were identified. It is recommended that policy and practice operate to consistently view diagnosis, treatment and 'survivorship' not as distinct events in a person's life, or as separate service responses, but as integrated opportunities for providing much needed psycho-social support. We termed this Recovery Orientated Practice and Emphasis (ROPE).

**Discussion or Conclusions:** ROPE offers a new approach for clinicians and policy-makers to deliver and design psycho-social support services across the cancer trajectory. By emphasising recovery from the outset, ROPE supports the development of integrated, effective, resource-efficient models of care and improved survivorship outcomes.

### 151 | Type of Cancer Treatment and Work-Related Cognitive Symptoms in Cancer Patients who returned to Work: An 18-month follow up Study

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<sup>3</sup>University of Groningen, Department of General Practice and Elderly Care Medicine, University Medical Center Groningen, Groningen, Netherlands; <sup>4</sup>The Netherlands Cancer Institute, Division of Psychosocial Research and Epidemiology, Amsterdam, Netherlands; <sup>5</sup>University of Amsterdam, Department of Psychology, Amsterdam, Netherlands

**Background/rationale or Objectives/purpose:** OBJECTIVES/PURPOSE— More and more cancer patients return to work after a cancer diagnosis. Yet, little is known about work-related cognitive symptoms after return to work. This study examined (1) the course of work-related cognitive symptoms of cancer patients who returned to work, and (2) the longitudinal associations between type of cancer treatment and work-related cognitive symptoms.

**Methodology or Methods:** METHODS— Data from the Dutch longitudinal 'Work-Life-after-Cancer' study were used. The study population consisted of 384 cancer patients who completed questionnaires at baseline and at 6, 12 and 18 months follow-up. Cognitive symptoms (i.e., working memory and executive function) were assessed with the Cognitive Symptom Checklist-Work. Data on cancer treatment type were obtained from the Netherlands Cancer Registry. Linear Mixed Models were used to examine the course of cognitive symptoms over time. Generalized Estimating Equations analyses were used to investigate the association between type of cancer treatment and work-related cognitive symptoms.

**Impact on practice or Results:** RESULTS— At baseline, patients experienced more symptoms regarding their working memory ( $M = 32.0$ ;  $CI =$

$30.0, 34.0$ ) compared to symptoms regarding their executive function ( $M = 19.3$   $CI = 17.6, 20.9$ ). During 18 months follow-up, these symptoms remained stable. Symptoms of working memory ( $b: -11.2$ ;  $CI = -18.3, -4.0$ ) and executive function ( $b: -9.7$ ;  $CI = -15.5, -4.0$ ) were significantly lower for cancer patients treated with chemotherapy, exclusively or in combination with surgery, compared to those treated with surgery only.

**Discussion or Conclusions:** CONCLUSION AND CLINICAL IMPLICATIONS— Healthcare professionals should focus on working memory symptoms when guiding and supporting cancer patients at work. The contradictory finding that cancer patients receiving chemotherapy report fewer cognitive symptoms warrants further research.

### 149 | Follow-up strategies after primary cancer treatment in adult cancer survivors: a systematic review and meta-analysis

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**Background/rationale or Objectives/purpose:** The impact of different follow-up strategies after cancer treatment on prognostic and patient-reported outcomes remains unclear. In this Cochrane review, we compared the effects of: 1) Non-specialist-led versus specialist-led follow-up; 2) Less intensive versus more intensive follow-up; and 3) Follow-up integrating patient symptom education or care plans versus usual care, on overall survival, time-to-detection of recurrence, health-related quality of life (HQL), anxiety and depression.

**Methodology or Methods:** We followed standard Cochrane methodology and included randomized trials comparing different follow-up strategies for adult cancer survivors following completion of curatively intended primary treatment. We excluded studies that did not report at least one of our outcomes. A random effects model was used in the meta-analysis. Current results are based on a search done on 19 December 2016. Updated results will be presented at the congress.

**Impact on practice or Results:** We included 46 trials (15,795 participants, eleven cancer sites). Non-specialist-led follow-up may decrease overall survival ( $HR 1.34, 95\%CI 0.97$  to  $1.86, P = 0.07$ ) but makes little or no difference at 12 months to HQL ( $MD 1.06, 95\%CI -1.83$  to  $3.95, P = 0.47$ ), anxiety ( $MD -0.03, 95\%CI -0.73$  to  $0.67, P = 0.94$ ) and depression ( $MD 0.03, 95\%CI -0.35$  to  $0.42, P = 0.86$ ). Less intensive follow-up probably makes little or no difference to overall survival ( $HR 1.05, 95\%CI 0.94$  to  $1.18, P = 0.39$ ) but increases time-to-detection of recurrence ( $HR 0.83, 95\%CI 0.75$  to  $0.91, P = 0.0002$ ). We could not synthesize results for the other comparisons and outcomes due to the lack of data.

**Discussion or Conclusions:** Evidence regarding the effects of the different follow-up strategies vary substantially. More research is needed.

### 148 | The role of partner health literacy on patient quality of life, depression and anxiety after breast cancer treatment

*Beverley Lim Hoeg<sup>1</sup>, Elisabeth Anne Wreford Andersen<sup>1</sup>, Lena Saltbæk<sup>2,1</sup>, Anne Sofie Friberg<sup>3,1</sup>, Randi Valbjørn Karlsen<sup>1</sup>, Christoffer Johansen<sup>3,1</sup>, Susanne Oksbjerg Dalton<sup>1,4</sup>, Trine Allerslev Horsbol<sup>1</sup>, Pernille Envold Bidstrup<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Partners play a crucial role in providing support to the cancer patient during and after treatment. An

important dimension of this support involves health literacy (HL), which is the ability to access and manage health-related information in order to help the patient make medical decisions and navigate the healthcare system. Previous studies indicate that lower HL among patients is associated with worse health and psychological outcomes. However, the impact of partner HL on patient outcomes, and how patient characteristics may affect this relationship, are not well-studied.

This study investigates the association between HL in partners of women with breast cancer and patient quality of life, depression and anxiety after completion of breast cancer treatment. We also investigated whether this association was modified by the patient's own levels of HL and self-efficacy.

**Methodology or Methods:** We used data from baseline questionnaires (n = 360 couples) administered in the MyHealth study, a larger randomized controlled trial investigating breast cancer follow-up. All patients were included immediately after completion of primary treatment. HL was measured using the HLQ. Quality of life, depression, anxiety and self-efficacy were measured using the EuroQol EQ-5D, PHQ-9, GAD-7 and PAM respectively. Multivariate regression analyses were performed. We further examined interaction by patient age, level of education, health literacy and self-efficacy.

**Impact on practice or Results:** The data is currently being analyzed. We expect to present full results at the congress.

**Discussion or Conclusions:** Study results will contribute knowledge regarding the role of the partner in patient outcomes and help identify potentially vulnerable patients who may need supportive interventions.

#### 146 | The role of metacognition and attentional bias on fear of cancer recurrence trajectories: a longitudinal study

*Wing Lam Danielle Ng<sup>1</sup>, Ava Kwong<sup>2</sup>, Dacita Suen<sup>2</sup>, Miranda Chan<sup>3</sup>, Amy Or<sup>3</sup>, Suman Simon Ng<sup>4</sup>, Chi Chung Foo<sup>2</sup>, Brenna Fielding<sup>5</sup>, Wendy Wing Tak Lam<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** This longitudinal study explored the heterogeneous nature of Fear of cancer recurrence (FCR) trajectories in patients with breast (BC) or colorectal cancer (CRC) in a 12-month period after surgery, and examined the role of metacognition (MCQ) and attentional bias in differentiating these trajectories.

**Methodology or Methods:** 270 Chinese patients with BC (n = 163) or CRC (n = 107) completed FCR (FCR-SF) at baseline, then 3-, 6-, and 12-month post-baseline. Metacognition (MCQ-30), and Attentional bias (dot-probe tasks) were assessed at baseline. Latent growth mixture modelling identified FCR trajectories. Multinomial logistic regression determined if FCR trajectories are varied by MCQ and attentional bias after adjusting for potential covariates.

**Impact on practice or Results:** We identified three FCR trajectories: low-stable (62.5%), chronic high (29.2%), and recovering (8.3%). These trajectories were predicted by MCQ-Negative beliefs about worry, MCQ-Cognitive confidence and age ( $c^2(6) = 38.31, p < 0.001$ ). Patients in the chronic high and recovering FCR groups expressed more negative beliefs about worry at baseline (OR = 1.08,  $p = 0.055$ , OR = 1.13,  $p = 0.035$ , respectively), compared with the low-stable FCR group. Patients experiencing persistently high FCR were less confident at cognitive abilities (OR = 1.12,  $p = 0.004$ ) and younger (OR = 0.95,  $p = 0.001$ ). Attentional bias did not significant predict FCR trajectories.

**Discussion or Conclusions:** Younger patients with more Negative MCQ and poorer cognitive confidence were vulnerable to long-term high FCR and represented a priority for targeted intervention, reflecting the importance in helping patients to modify their metacognitive beliefs for better FCR management

#### 137 | Unmet needs among survivors of childhood acute lymphoblastic leukemia: are they related to psychological and health status?

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**Background/rationale or Objectives/purpose:** Nowadays, the majority of children diagnosed with cancer recover. Identification of survivors' needs is necessary to ensure that appropriate supportive care is provided to them. However, little is known on pediatric cancer survivors' unmet needs. We aimed to (1) identify the unmet needs reported by pediatric acute lymphoblastic leukemia (ALL) survivors and (2) explore the contribution of physical and psychological health status to unmet needs.

**Methodology or Methods:** Seventy-three survivors of childhood ALL (mean age 27 years) were surveyed. The participants underwent comprehensive clinical, biologic and psychosocial investigation (e.g., self-esteem, self-reported pain). Emotional, financial, care and information unmet needs were assessed with the SF-SUNS. Cluster analyses were performed to derive homogeneous and differentiated patterns of needs and health status. Association with external factors were explored with multivariate regressions.

**Impact on practice or Results:** We identified two clusters of participants. (1) Survivors with moderate to important unmet needs (mostly in the emotional domain) had major deterioration in health status. (2) Survivors with no or few unmet needs had less health status deterioration. When explaining unmet needs in multivariate analyses, the level of self-reported pain appeared as a significant predictor of all domains of unmet needs ( $p < .05$ ).

**Discussion or Conclusions:** The results highlight the need to provide increased psychological support to survivors whose health status is deteriorating. A health indicator could be created to identify at an early stage survivors' needing more intense follow-up care. The use of the SF-SUNS in this population appears limited, with gaps in some domains. Adaptations or developments should be made to measuring childhood cancer survivors' unmet needs.

#### 135 | Evaluation of the Cancer and Work Return to Work Tool

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**Background/rationale or Objectives/purpose:** Return to work (RTW) is a key indicator in quality of life for cancer survivors, yet survivors, healthcare service providers and employers have little guidance supporting their RTW. CIHR-funded preliminary usability data on the Return to Work Tool was collected for from N = 48 knowledge users (n = 30 cancer survivors, n = 12 healthcare providers, and n = 6 employer representatives) during 5 workshops held across Canada (BC, AB, NS, and two in QC) to assess the utility and satisfaction.

**Methodology or Methods:** The project is guided by the OMRU. The OMRU provides a framework for implementing KT activities with the



critical aim of obtaining engagement in and adoption of an innovation. The OMRU model is structured in six steps. In this presentation, we will describe the identified barriers and facilitators to adoption (step 3) by the participants who took part in the workshops. We will present their knowledge translation strategies (step 4) to address barriers and enhance facilitators and iii) evaluate the adoption of the tool (step 5–6).

**Impact on practice or Results:** In light of epidemiological studies reporting that only 60% of individuals (on average) diagnosed with cancer have returned to work (RTW) 1–2 years following cancer treatment makes the evaluation of the Cancer and Work Return to Work online tool even more valuable and timely.

**Discussion or Conclusions:** Evaluating how online tools are adopted and use can be effective as a wide-reaching knowledge translation activity to reinforce patient autonomy.

### 134 | CANTO IOC: Longitudinal study of psychosocial predictors of positive and negative perceived impacts of breast cancer among survivors

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**Background/rationale or Objectives/purpose:** Main purpose of this study: to describe in patients with breast cancer (BC) the long-term perceived impacts of cancer, that is concerns and benefits that patients attribute to their illness experience. Secondary objective: to determine the predictors of this perceived impacts, including the possible weight of psychological factors.

**Methodology or Methods:** CANTO (NCT01993498) is a multicenter prospective longitudinal study including 12 000 women with stage I-III BC. For this CANTO IOC sub-study, we considered a 4194 pts sample. Primary outcome: perceived impact of cancer (IOCV2) defined as positive (PIS, e.g. positive self-evaluation) and negative (NIS, e.g. fear of recurrence) 12 months after end of treatments (M12). Predictors assessed: baseline demographic/medical characteristics, psychological factors (psychiatric history, HADS) and optimism (LOT-R).

**Impact on practice or Results:** The most reported impacts perceived by the participants (m age = 55.4, SD = 11.5) are related to: Altruism and Empathy (PIS, 82.1% of pts), Health Awareness (PIS, 72%) and Worry (NIS, 69.5%). No demographic or medical characteristics have been found to be associated with PIS at M12. Psychological factors explained a small proportion of PIS (DR2 = .061,  $p = .001$ ). They explained a significant proportion of NIS (DR2 = .24,  $p = .001$ ), with younger age ( $b = -.09$ ,  $p = .001$ ), higher depression ( $b = .25$ ,  $p = .001$ ), lower optimism ( $b = .082$ ,  $p = .001$ ), higher pessimism ( $b = .11$ ,  $p = .001$ ) associated with NIS at M12.

**Discussion or Conclusions:** Positive impacts of cancer were also reported by the participants, especially related to altruism and empathy. This result should not obscure the significant proportion of women showing negative impacts of BC. Our results offer tracks to target psychological vulnerabilities detected before the treatments.

### 132 | Defining Responses to the Needs Reported by Adolescents and Young Adults Survivors of Brain Tumor, their Parents and Clinicians

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**Background/rationale or Objectives/purpose:** Adolescents and young adult brain tumor survivors (AYA-BTS) are a vulnerable population. Because of the sequelae of cancer and treatments, they frequently experience communication and learning difficulties affecting their social skills and employability. The needs of this population have been well documented but avenues for meeting them still require to be developed and formalized. The aim of this study is to generate and define action lines to improve the development, facilitate access and optimize adherence to institutional and community resources.

**Methodology or Methods:** We used a constructivist approach with focus group interviews to explore responses to AYA-BTS' needs adding the perspectives of survivors, parents and health professionals (N = 22). Participants were recruited using a convenience sample from the long term follow-up clinic at the UHC Sainte-Justine (Montreal). Computer-assisted thematic analysis was used to draw groups' common and different themes under three general categories: personal life, school and work.

**Impact on practice or Results:** Three general overarching avenues for resource design were identified: 1) multipurpose information exchange network dedicated to information, education and socialization; 2) user-friendly filtered general internet platform with various topic and ad hoc resources; 3) inter-professional and interinstitutional transfer tools and procedures to promote access to information and services at the right time to facilitate the after care transition.

**Discussion or Conclusions:** AYA-BTS, parents and clinicians identified some key elements that could promote transition and re-entry after treatments. This could help design future liaison program to improve access to adapted services and resources in the process of re-entering school and work.

### 128 | Preferred Strategies for Managing Sexual Side Effects for Prostate Cancer Patients on Androgen Deprivation Therapy

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**Background/rationale or Objectives/purpose:** Prostate cancer patients on androgen deprivation therapy (ADT) often experience sexual difficulties. We offered an educational intervention to support patients in managing treatment side effects.

**Methodology or Methods:** 91 patients ( $68.3 \pm 7.6$  years old) attended the program and completed an evaluation. Outcomes included sexual side effect occurrence and use of or willingness to use strategies for managing those side effects. On average, patients were on ADT for  $147.9 \pm 100.8$  days.

**Impact on practice or Results:** Erectile dysfunction (ED), loss of libido, and relationship strain were experienced by 82%, 64%, 29% of patients respectively.

Phosphodiesterase inhibitors were used by half of patients for ED, however, 20% stopped using them. Over 40% of patients were participating in non-erectile-dependent sexual activities. Fewer patients expressed preference for sexual toys, penile injections, or vacuum erection device (all <20%).

Most patients (>78%) managed reduced sexual desire by communicating explicitly about sexual interest, sharing initiation of sexual activities, creating a "romantic" environment for sexual activity, and engaging in sexual activity with their partner despite low desire. However, for those not reporting reduced desire these potential strategies were rated poorly.

Patients who reported relationship strain, had used increased communication, participation in shared activities, and displays of physical

affection with their partner (all >79%). Among those who had not experienced relationship strain, >80% would consider such strategies should relationship strain occur in the future.

**Discussion or Conclusions:** Patients initially prefer pharmacological treatment for ED, though often they stop using it. Patients are very willing to use behavioural changes for managing reduced desire and relationship strain.

### 117 | Smoking behavior trajectory for patients with newly diagnosed lung cancer who are continued smokers or recent quitters

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**Background/rationale or Objectives/purpose:** Objectives: To identify subgroups of smoking trajectory after lung cancer diagnosis based on repeated self-reported data and to compare quality of life between subgroups.

**Methodology or Methods:** Methods: The study sample (n = 133) consisted of newly diagnosed lung cancer patients who were continued smokers or recent quitters at the time of diagnosis. Smoking behavior and psychological variables were collected at diagnosis and every month thereafter for 6 months. Smoking behavior was a binary variable based on patients' self-report of whether they smoked in the past month. The mixture latent Markov model was used to identify the subgroups of smoking behavior trajectory.

**Impact on practice or Results:** Results: Two classes of smoking trajectory were identified with distinct patterns of transition probabilities between two latent states (low vs. high craving to smoke) over time. We named Class I as 'perseverance for abstinence' and Class II as 'indecisive for abstinence'. For both classes, smoking prevalence dropped dramatically at 1 month after diagnosis; however, this prevalence went up gradually from 2 to 6 months post-diagnosis for Class II, while stayed nearly zero for Class I. Patients with second-hand smoke exposure, lower self-efficacy for not smoking, and higher nicotine dependence were more likely to belong to Class II. At the 6<sup>th</sup> month after diagnosis, Class I had significantly higher quality of life than Class II.

**Discussion or Conclusions:** Conclusion and clinical implications: Heterogeneous trajectories of smoking behavior exist in lung cancer patients and the class membership predicts quality of life. The study findings can inform the development of smoking-cessation programs for lung cancer patients.

### 105 | Interventions for prostate cancer survivorship: A systematic review of reviews

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**Background/rationale or Objectives/purpose:** The purpose of this project was to systematically review evidence for interventions addressing the key domains of the American Cancer Society (ACS) and American Society of Clinical Oncology (ASCO) Prostate Cancer Survivorship Care Guidelines: health promotion, surveillance, physical side effects, psychosocial management, and care-coordination.

**Methodology or Methods:** A systematic review of previously published systematic reviews and meta-analyses was conducted, in order to identify interventions targeting ACS/ASCO prostate cancer survivorship care guideline domains. Five databases were searched for articles published in

English up to 2018. Titles and abstracts were independently assessed for inclusion based on predetermined criteria. Relevant data were extracted and an assessment of the methodological quality of each included review was performed. PRISMA systematic review reporting methods were applied.

**Impact on practice or Results:** Forty-four systematic reviews of interventions targeting ACS/ASCO prostate cancer guideline domains were included for review. Exercise and psychosocial interventions were effective for improving men's survivorship outcomes in the domains of health promotion, physical side effects, and psychosocial management. Across the domains evidence quality varied and there was a limited diversity of participants. No reviews of interventions addressing surveillance and cancer care coordination were identified.

**Discussion or Conclusions:** There are substantive knowledge gaps in prostate cancer survivorship research that are a barrier to real improvements in men's outcomes across the breadth of the survivorship experience. A targeted research and implementation agenda in prostate cancer survivorship is urgently needed if we are to meet the current and future burden of this disease on individuals, families, and communities.

### 88 | Relationship of posttraumatic stress and growth in childhood cancer survivors

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**Background/rationale or Objectives/purpose:** Although some theories assume a connection of posttraumatic growth (PTG) with posttraumatic stress (PTS), the relationship of PTS and PTG has not been clearly proven yet and the presence of PTG does not necessarily indicate a decrease of distress. The goal of this study is to help clarify the relationship of PTS and PTG in childhood cancer survivors.

**Methodology or Methods:** The study included 167 childhood cancer survivors aged 11–27 years who were administered the questionnaire assessing posttraumatic stress symptoms (UCLA PTSD) and posttraumatic growth (BFSC). Respondents were divided into three groups based on the severity of their posttraumatic stress symptoms (no, mild, moderate) and these groups were then compared by analysis of variance in the degree of posttraumatic growth.

**Impact on practice or Results:** The results did not show statistically significant difference in the level of PTG between the three PTS groups (no, mild, moderate). These results are in line with the results of studies of PTS and PTG in cancer or other serious illness survivors, where PTG appears to be unrelated to PTS. However, the results may be affected by a low proportion of survivors with more severe posttraumatic stress symptoms preventing us from analysing PTG in the full range of PTS.

**Discussion or Conclusions:** Although the comparison of mean PTG scores in the three PTS groups failed to find statistically significant connection of PTS and PTG, inspection of scatter plot suggests possible trend of reduced PTG variability with medium levels of PTSS.

### 74 | Internet-delivered Mindfulness-Based Cognitive Therapy (iMBCT) for anxiety and depression in breast and prostate cancer survivors - a randomized controlled trial

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**Background/rationale or Objectives/purpose:** Mindfulness-based interventions (MBIs) have been shown to reduce distress in cancer patients and survivors, but challenges remain to make MBIs available to patients in need. We therefore developed and tested the efficacy of an internet-delivered mindfulness-based cognitive therapy (iMBCT) program for psychological distress in cancer survivors.

**Methodology or Methods:** 150 breast (N = 137) and prostate cancer

(N = 13) survivors were randomized (7:3 ratio) to iMBCT (N = 104) or waitlist (N = 46). The primary outcomes of anxiety (STAI-state) and depression (BDI-II) were assessed at T1 (baseline), T2 (5 weeks), T3 (10 weeks/post-intervention), and T4 (6 month follow-up). Intent-to-treat group x time effects were evaluated with mixed linear models (MLMs).

**Impact on practice or Results:** Statistically significant effects were found for both anxiety (Cohen's  $d = 0.45$ ;  $p = 0.017$ ) and depressive symptoms ( $d = 0.42$ ;  $p = 0.024$ ) at T3. The effects were maintained at T4 for anxiety ( $d = 0.40$ ;  $p = 0.029$ ), but not for depressive symptoms ( $d = 0.28$ ). No moderating effects were found of gender/cancer type ( $p = 0.39$ – $0.70$ ). In subsequent (zero effect from baseline) sensitivity analyses conducted due to uneven dropout (iMBCT:30.8%;waitlist:17.4%), effects remained statistically significant for anxiety ( $d = 0.39/0.35$ ;  $p = 0.02/0.03$ ), but not for depressive symptoms ( $d = 0.29$ ;  $p = 0.07$ ).

**Discussion or Conclusions:** Effects of iMBCT were robust or anxiety, but not for depression. Furthermore, effects for anxiety were maintained at follow-up and comparable to those reported in meta-analyses for MBIs with cancer patients and survivors (Hedges's  $g = 0.37$  and  $0.26$ ). iMBCT may be offered as an alternative to face-to-face MBCT to cancer patients and survivors suffering from anxiety. Further studies on efficacy for depression are needed.

#### 64 | 'Brain fog' after breast cancer treatment: could it be related to stress rather than a fixed effect of chemotherapy?

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**Background/rationale or Objectives/purpose:** Objective: This pilot study assessed whether cognitive difficulties experienced by breast cancer patients after chemotherapy were related to remediable stress rather than to permanent chemotherapy-related toxicity.

**Methodology or Methods:** Methods: 50 women post-treatment for breast cancer were enrolled in a 10 week contemplative group intervention, Compassion-Based Resilience Training (CBRT). CBRT teaches mindfulness and compassion-based skills, and how to use them to break stress-reactive habits of thinking feeling and acting, to build resilience, and to learn self-healing alternatives. Mindful attention training is the foundational skill, and self-compassion the catalyst for change. Body-focused attention, metacognitive awareness, prosocial imagery and breath-work were used to prime neuroplasticity and to foster the integration of self-healing insights and practices. Before and after the intervention, stress was measured by the Impact of Events Scale, and cognitive difficulties were measured by the European Organization for Research and Treatment of Cancer scale.

**Impact on practice or Results:** Results: Baseline cognitive difficulties and stress were directly correlated; the higher the reported stress level, the greater the cognitive difficulties. After the contemplative intervention, those who experienced the largest decrease in stress levels reported the largest improvement in cognitive difficulties.

**Discussion or Conclusions:** Conclusion and clinical implications: This pilot study suggests that the cognitive difficulties experienced by breast cancer survivors can be ameliorated by a contemplative intervention that reduces stress, and that the cognitive impairment may not be related to permanent treatment toxicity.

#### 52 | Experiences of Cancer Patients in Transition Study: Making data publicly accessible to advance cancer survivorship research

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**Background/rationale or Objectives/purpose:** Despite increasing numbers of cancer survivors, survivorship is a well-recognized but poorly understood gap in cancer control, due to the lack of availability of consistent and reliable

data on what individual experience in the post-treatment period. To better understand the challenges related to cancer survivorship, the Canadian Partnership Against Cancer conducted the largest pan-Canadian survey, the Experiences of Cancer Patients in Transition Study ('Transitions Study'), in collaboration with 10 provincial cancer agencies and programs across Canada.

**Methodology or Methods:** The survey was designed to examine: the needs (physical, emotional, practical, and informational) of cancer survivors 1–3 years after treatment, patient characteristics associated with unmet needs, and system enablers/predictors correlated with needs being met.

**Impact on practice or Results:** The study had an overall response rate of 33.3%, with 13,319 respondents across all 10 provinces. Results indicate many survivors have concerns about physical, emotional and practical issues but are not receiving help to reduce their suffering.

**Discussion or Conclusions:** This study is the first step in understanding the challenges faced by patients who transition out of the cancer system and back into the community and broader health system without having access to all the supports they need. In Spring 2019, the Partnership made Transitions Study data from all Canadian provinces available online for use by research, practice and policy specialists. By making the raw data freely available to the public, others will be able to conduct their own analyses to answer cancer survivorship related questions and share their findings to expand our understanding of the experiences of people with cancer post-treatment.

#### 50 | Psychosocial Barriers and Enablers for Prostate Cancer Patients in Starting a Relationship

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**Background/rationale or Objectives/purpose:** Being in a relationship has beneficial impacts on cancer survivorship, but prostate cancer (PCa) patients, who are single, may struggle to initiate a new relationship because of various reasons. Here, we studied barriers and enablers in starting a new relationship after PCa diagnosis.

**Methodology or Methods:** PCa organizations in New Zealand and USA distributed a 20-minute survey on their social media and patient mailing list. The survey consists of validated questionnaires (on treatment side effects, loneliness, shyness) and questions developed by our team to capture what factors prevent or limit PCa patients from forming a new relationship.

**Impact on practice or Results:** Patients who are either Single [ $n = 17$ , 68 (IQR = 14) years old] or had started a new relationship post-diagnosis [Non-Single,  $n = 13$ , 72 (IQR = 9.5) years old] were recruited in this study. More Non-Single patients were from high income household than Single patients ( $p < 0.01$ ). Single patients were lacking emotional support ( $p < 0.05$ ), more shy ( $p < 0.05$ ), and lonelier ( $p < 0.01$ ) than Non-Single patients, suggesting the psychological benefits of having a relationship. Four themes (sexual dysfunction, cancer disclosure, reduced libido and lack of confidence) were found as major barriers to starting a new relationship, and patients thought that improved sexual function and being open about cancer diagnosis help form a new relationship. Over 80% of both groups were comfortable in disclosing their cancer diagnosis to a potential partner, but more Single patients (82%) had low-moderate confidence in finding a new partner than Non-Single patients (62%).

**Discussion or Conclusions:** Clinicians need to consider biopsychosocial factors when advising patients who seek a new partner.

#### 23 | Experiences of Varied Support Systems among Married Pakistani Women in the First Two Years Post-Mastectomy at a Tertiary Care Hospital in Karachi, Pakistan

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**Background/rationale or Objectives/purpose:** The purpose of this study was to explore the experiences of married Pakistani women, in the first 2 years after mastectomy. Breast cancer is the leading cause of death in women worldwide. Women diagnosed with breast cancer are at increased risk of psychological distress. In Pakistan, breast cancer has the highest incidence among all cancers, thus making it a very important disease not only in terms of treatment, but also to understand the experience of a woman going through it.

**Methodology or Methods:** A qualitative descriptive exploratory design was used to explore the experiences of women. On the basis of inclusion criteria, twelve participants were recruited from the out-patient clinic of a renowned tertiary care hospital in Karachi, Pakistan. Data was collected through semi-structured interviews, which were audio-taped and transcribed then analysis and coding was done. Then themes and subthemes were identified.

**Impact on practice or Results:** In this study few of the most significant themes were; first theme worries, included four sub themes (1.1) self-image, (1.2) raising children, (1.3) staging of cancer and metastasis, and (1.4) increasing financial burden. Another theme, coping strategies, with two sub themes: (2.1) faith in God, and (2.2) fighting back attitude. Third theme, recommendations, included three sub themes: (3.1) formulation of support groups, (3.2) designated nurse expert, and (3.3) government interventions.

**Discussion or Conclusions:** The study findings suggest that effective coping strategies were beneficial for these women. This study has direct implications for oncology nurses and community health nurses. The increasing number of breast cancer in Pakistan suggests, to promote rehabilitative and palliative nursing.

## T. SYMPTOM AND LATE EFFECTS

### 712 | What is the role of psychological resilience in the relationship of cognitive reappraisal and depression in patients with breast cancer: moderating, mediating, or both?

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**Background/rationale or Objectives/purpose:** To explore the role of psychological resilience and cognitive reappraisal in reducing depressive symptoms in breast cancer patients.

**Methodology or Methods:** A cross-sectional survey was conducted among patients with breast cancer who were hospitalized for treatment of breast cancer. Depressive symptoms, cognitive reappraisal, and psychological resilience of the subjects were assessed using the 9-item depression module of the Patient Health Questionnaire, the Emotional Regulation Scale, and the Connor-David Resilience Scale. Analyses of mediating and moderating effects of resilience were conducted using Mplus 7.

**Impact on practice or Results:** The mediating effect of psychological resilience between cognitive reappraisal and depressive symptoms was significant (standardized effect size = -0.13, 95% CI = -0.19 – -0.08). The direct effect of cognitive reappraisal on depressive symptoms was also significant (standardized effect size = -0.19, 95% CI: -0.29 – -0.07). After controlling for age and education level, both of the indirect effects in the model (standardized effect size = -0.06, 95% CI: -0.10 – -0.02) and direct effects (standardized effect size = -0.39, 95% CI: -0.47 – -0.28) were significant. There was no significantly moderate effect of psychological resilience between cognitive reappraisal and depressive symptoms (standardized effect size = 0.01, 95% CI: -0.15 – 0.12).

**Discussion or Conclusions:** Cognitive reappraisal can directly reduce depressive symptoms, and can also reduce depressive symptom through improving psychological resilience.

### 708 | Post Traumatic Stress Disorder (PTSD), Post Traumatic Growth (PTG) and Tumor Pro-Inflammatory Markers among Hispanic Breast Cancer (BC) Patients

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**Background/rationale or Objectives/purpose:** Cancer patients have a higher risk of experiencing PTSD symptomatology. Exposure to psychosocial traumatic events is a well-known risk factor to systemic inflammation and PTG is known to be a protective factor. However, little is known about their relationship in Hispanic BC patients.

**Methodology or Methods:** This is a secondary data analysis of a pilot cross-sectional study, aimed at exploring the rates of depression, early life stress and its relationship with inflammatory markers of BC tumor microenvironment. Recruitment is still ongoing (total n = 32), it'll be completed by May 2019. Participants are recruited before undergoing tumor surgery. Participants complete a package of surveys through interviews that includes measures of PTSD and PTG. Tumor infiltration of pro-inflammatory macrophages will be assessed after completing recruitment and correlated with the behavioral data to explore these associations. Pearson Correlation Tests are used to explore correlation between the variables.

**Impact on practice or Results:** Preliminary data (n = 20) shows that sixteen participants reported experiencing trauma before BC diagnosis while four reported the cancer diagnosis as the experienced trauma. Descriptive analyses reveal that 30% of participants experienced re-experiencing of the trauma, 45% showed avoidance and 25% demonstrated cognitive alterations, negative thought and increased physiological reactivity. Significant symptomatology in at least one PTSD symptom was seen in 75% of participants while 100% of participants reported high levels of PTG.

**Discussion or Conclusions:** Based on preliminary findings, we can infer that there is a high prevalence of PTSD symptomatology among the study sample. Also, a high rate of participants' reported exposure to psychosocial trauma before BC diagnosis warrants further research investigation.

### 693 | Impact of uncontrolled physical symptoms on fear of recurrence among breast cancer survivors

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**Background/rationale or Objectives/purpose:** We conducted a prospective cohort study to evaluate how uncontrolled physical symptoms during and after treatment affect the fear of recurrence (FCR) among breast cancer survivors.

**Methodology or Methods:** We recruited 424 non-metastatic breast cancer patients who were expected to receive surgery and adjuvant breast cancer treatments at two university based cancer centers in Seoul-metropolitan, South Korea from July 2010 and July 2011 and followed. Uncontrolled symptom was defined as 66 or higher symptom scores at 12 and 24 and 36 months after surgery using EORTC-QLQ-C30 and QLQ-BR23. Fear of cancer recurrence (FCR) was measured at 24 and 36 months after surgery. Growth mixture models were used to identify trajectory classes. Multivariable logistic regression was performed to evaluate impact of uncontrolled symptoms on FCR.

**Impact on practice or Results:** About 10% of the survivors had problems with fatigue, insomnia, financial problem, upset by hair loss and arm symptoms at 12 months after surgery and they continued to experience the same problems at 24 and 36 months after surgery. Survivor who had unresolved insomnia throughout the survivorship period were about 20 times (19.70, 95% CI 3.19, 121.56) more likely to experience severe FCR compared to survivors without insomnia. Similarly,

survivors with continuing problems with hair loss (Odds ratio (OR), 5.17, 95% CI 1.11, 24.02) were more likely to experience severe FCR at 36 months after surgery.

**Discussion or Conclusions:** Uncontrolled physical symptoms were associated with severe FCR. More active monitoring and intervention would be necessary to control physical symptoms during and right after cancer treatment.

### 666 | The Role of Circadian Rhythms in Cancer-Related Symptoms: A Prospective Controlled Chrono-Bio-Behavioral Observation Study

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**Background/rationale or Objectives/purpose:** Emerging evidence indicates that circadian rhythms may be disrupted following cancer and its treatment, and that circadian rhythm disruption may be an underlying mechanism of cancer- and cancer treatment-related symptoms (CRS) such as fatigue, sleep disturbance, cognitive impairment, and depressed mood. The proposed study will prospectively examine circadian rhythms and CRS in recently diagnosed breast cancer (BC) patients from pre-surgery to 12 months post-chemotherapy. A matched healthy control group will serve as a comparison.

**Methodology or Methods:** In this prospective controlled observational study, 63 BC patients will be assessed at five time points from pre-surgery to 12-months post-chemotherapy and compared with 63 matched healthy controls. Participants will wear wrist actigraphs in order to assess markers of circadian rhythms (skin temperature and activity rhythms), complete questionnaires and assessment batteries of CRS (fatigue, sleep disturbances, cognition, and depressed mood) and blood samples will be collected to examine immune markers (e.g. IL-6, TNF- $\alpha$ ) at each time point.

**Impact on practice or Results:** Cosinor-based rhythmometry will be used to assess rhythm robustness at the individual level at each time point. Between-group differences over time in circadian rhythm markers will be tested using repeated measures linear mixed models. A global symptom score (GSS) using the mean of all z-transformed symptom scores will facilitate an estimation of the within-person association with circadian rhythms. Furthermore, we will explore longitudinal associations between circadian rhythms and immune markers.

**Discussion or Conclusions:** The proposed study will provide important insights into the effects of cancer and its treatment on circadian markers that may be important drivers of CRS.

### 649 | The association between assignment to dim or bright hospital room and fatigue during stem cell transplantation: A longitudinal pilot study

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**Background/rationale or Objectives/purpose:** Fatigue is a deleterious symptom often reported by patients undergoing autologous stem cell transplantation (SCT). Evidence suggests that circadian rhythm disruption may be an underlying mechanism of cancer-related fatigue. Given that light is the strongest entrainer of circadian rhythms, fatigue severity may be modulated by light exposure during hospitalization. The aim of this pilot study was to investigate the association between assignment to “dim” or “bright” inpatient rooms and fatigue severity during SCT.

We hypothesized that patients assigned to dim rooms would experience greater fatigue over time than patients assigned to bright rooms.

**Methodology or Methods:** Patients about to undergo SCT for a hematological malignancy who were assigned (based on availability) to “bright” East facing or “dim” West facing rooms were approached to participate. Eligible and consenting participants completed daily symptom questionnaires, including the Brief Fatigue Inventory, from Day 0 (immediately prior to SCT) to Day 12 after SCT. Linear mixed models (LMMs) were undertaken to investigate between-group differences in fatigue over time.

**Impact on practice or Results:** Sixteen participants were included in the final analyses (9 in dim rooms, 7 in bright rooms). LMMs revealed a marginally significant time  $\times$  room assignment interaction effect indicating that fatigue worsened over time in dim room, but not in bright room participants ( $F_{12, 70} = 1.56$ ;  $p = 0.08$ ), with a large effect size (partial eta squared = 0.21).

**Discussion or Conclusions:** Preliminary findings suggest that assignment to hospital rooms with greater bright light exposure may have beneficial effects on the trajectory of fatigue in SCT patients. Larger scale studies are warranted.

### 645 | Are Group and Individual delivery models for acupuncture comparable?: Findings from a noninferiority randomized trial of Group vs. Individual acupuncture for cancer pain

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**Background/rationale or Objectives/purpose:** A service delivery model using group acupuncture (AP) may be more cost-effective than individual acupuncture in general. However, there is little evidence to suggest whether group AP is a comparable treatment for cancer pain relief to standard individual AP. This study aimed to compare the efficacy and cost of Group vs. Individual delivery of a 6-week AP intervention in cancer survivors with chronic pain.

**Methodology or Methods:** A randomized non-inferiority trial of Individual (gold-standard treatment) vs. Group AP for cancer pain was conducted. The outcome was pain interference and severity, measured through the Brief Pain Inventory. Changes in outcomes from pre to post intervention were examined using mixed linear effects modeling and non-inferiority was inferred using a non-inferiority margin ( $\Theta$ ), difference of change between the two groups (D) and 95% CI.

**Impact on practice or Results:** Participants ( $N = 75$ ) were randomly allocated to group (36) or individual (39) AP. Both groups evidenced significant improvement in pain pre-post intervention [Effect sizes (d) for individual vs. group AP] were .48 vs. 1.06 for BPI interference, .89 vs. 1.29 for BPI severity. The non-inferiority hypothesis was supported for both pain interference [ $\Theta = 1$ , D 1.03, 95%CI: 0.15–2.20] and severity [ $\Theta = -0.81$ , D .52, 95%CI: .33–1.38]. Average cost per person of individual AP was higher than that of group AP.

**Discussion or Conclusions:** Conclusions and clinical implications: Group AP was non-inferior to Individual AP for treating cancer pain, and was in fact superior on the psychological component of pain interference. Group AP can be a more cost-effective treatment for alleviating cancer pain.

### 604 | The Effect of Systematic Light Exposure to Reduce Cancer-related Fatigue in Women Treated for Breast Cancer: A Randomized Controlled Trial of Circadian Active versus Inactive Light Stimulation

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**Background/rationale or Objectives/purpose:** Circadian disruption may be an underlying mechanism of cancer-related fatigue (CRF) and recent evidence suggests that circadian stimulating light can reduce CRF. The aim of the present study was to investigate the efficacy of circadian stimulating light on CRF in recently treated breast cancer patients.

**Methodology or Methods:** Eligible women screened for CRF (FACIT-Fatigue  $\leq 33$ ) at two months post-radiotherapy and who consented to participate were randomized to 4 weeks of circadian active morning white light (10.000K, 1500 lux) or a red light comparison condition. Assessments were undertaken at pre-intervention (T1), two weeks after (T2), immediately post-intervention (T3), and two months later (T4). Mixed linear models (MLM) were used to examine the primary outcome (FACIT-Fatigue). The study was preregistered at ClinicalTrials.gov (NCT02661308) and approved by the Regional Committee on Health Research Ethics.

**Impact on practice or Results:** Based on power analyses, 72 women were enrolled. Mean baseline fatigue was 27.96 (SD = 6.19). No baseline differences were observed between groups on age, education, cancer treatments, or CRF (all  $p$ 's > .05). MLM revealed a statistically significant main effect of time on CRF ( $p < .0001$ ; T1: 27.96, SE = 0.72; T2: 32.81, SE = 0.81; T3: 35.33, SE = 0.83; T4: 36.82, SE = 0.85). No statistically significant time-by-group interaction was observed for CRF ( $p = .52$ ). Sixty-eight percent of all participants experienced clinically meaningful reductions in CRF.

**Discussion or Conclusions:** Light exposure resulted in clinically meaningful reductions in CRF. No differences were observed between conditions. Improvements in CRF could be attributed to spontaneous recovery, placebo effects, real therapeutic effects, or a combination of these factors. We are currently recruiting a post-hoc treatment-as-usual group to further investigate this.

## 596 | Depressive symptoms, perceived stress, and proinflammatory cytokines in treatment-naïve patients with breast cancer

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**Background/rationale or Objectives/purpose:** We aimed to assess the levels of depressive symptoms and their associations with perceived stress, interleukin-1beta, interleukin-6, and tumor necrosis factor-alpha among treatment-naïve patients with breast cancer.

**Methodology or Methods:** Patients with breast cancer, matched patients with depression, and healthy women were recruited. Eligible participants completed questionnaires measuring depressive symptoms and perceived stress. Peripheral blood was collected to assess interleukin-1beta, interleukin-6, and tumor necrosis factor-alpha levels using radioimmunoassay kits. Linear and logistic regression analyses were used to evaluate the associations.

**Impact on practice or Results:** Severity of depressive symptoms and perceived stress among patients with breast cancer was significantly higher than that in healthy controls and lower than that in patients with depression. Only the perceived stress was significantly associated with the depressive symptoms in the logistic ( $B = 1.07$ ,  $p = 0.020$ , OR (odds ratio) = 2.91, 95% confidence interval: 1.19–7.13) and linear ( $B = 1.01$ , standardized  $B = 0.54$ ,  $p = 0.006$ , 95% confidence interval: 0.31–1.71) regression models among the patients with breast cancer. Depressive symptoms were associated with a lower level of interleukin-1beta in patients with breast cancer, but the association was not significant in regression models.

**Discussion or Conclusions:** Treatment-naïve patients with breast cancer reported increased perceived stress, which was independently

associated with severer symptoms of depression, and interleukin-1beta may be involved in the process.

## 591 | Increased risk for depression persists for years among women treated for gynecological cancers - a register-based cohort study with up to 19 years of follow-up

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**Background/rationale or Objectives/purpose:** Little is known about long-term risk of depression in women treated for gynecological cancers. We aim to investigate risk for depression among these women compared to women without a history of cancer.

**Methodology or Methods:** We followed 16,833 women diagnosed with gynecological cancers between 1998 and 2013 and 138,888 reference women in nationwide registers for up to 19 years. Women with a history of severe psychiatric disorders, and those who had redeemed a prescription for antidepressants three years before study entry were excluded from analyses. Regression analyses were applied to compare the risk for antidepressant use among patients compared to reference women, and to investigate associations between socio-demographic as well as clinical risk factors and use of antidepressants.

**Impact on practice or Results:** We found an increased risk for antidepressant use among women treated for ovarian (HR 4.14, 95 % CI 3.74–4.59), endometrial (HR 2.19, 95 % CI 1.97–2.45), and cervical cancer (HR 3.14, 95 % CI 2.74–3.61) one year after diagnosis. This increased risk persisted years after diagnosis in all three groups, with the longest (up to eight years) found for ovarian cancer. Advanced disease was strongly associated with antidepressant use followed by short education, and comorbidity.

**Discussion or Conclusions:** Women diagnosed with gynecological cancer have an increased risk for depression compared to reference women. The risk remains increased for years after diagnosis throughout and beyond standard oncological follow-up care. Advanced disease, short education, and comorbidity are factors associated with antidepressant use in this patient group.

## 570 | Psychological late-effects in partners of pancreatic cancer patients- A nationwide register-based study with 17 years of follow-up

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**Background/rationale or Objectives/purpose:** Pancreatic cancer (PC) is a stressful condition for patients and their partners as the patients have a dismal prognosis. The primary aim of the study was to investigate the risk of depression, anxiety and insomnia in partners of PC patients.

**Methodology or Methods:**

We used nationwide registries in a retrospective cohort study to examine the partners' use of psychotropic medication as a symptom proxy for depression, anxiety and insomnia. We followed 5,840 partners from 2000–2016 and compared them to an age-matched control cohort of



59,763 partners without a cancer diagnosis. The cumulated probability of psychotropic medication during the first two years of follow-up was estimated. Cox proportional hazard models were used to estimate hazard ratios (HRs) of the first prescription of psychotropic medication. We adjusted for socioeconomic positions.

**Impact on practice or Results:** We found an increased cumulated probability risk of first-time medication against depression, anxiety and insomnia during two years in PC partners compared to controls. Use of antidepressants were increased up to 5 years after diagnosis (HR 1.24, 95% CI 1.05–1.46). The use of anxiolytics (HR 1.57, 95% CI 1.27;1.95) and hypnotics (HR 1.95, 95% CI 1.64; 2.32) was increased up to 2 years after diagnosis.

**Discussion or Conclusions:** To our knowledge this is the first study to demonstrate the substantial psychological burden as a partner to a PC patient. Interventions to reduce psychological symptoms in partners warrant attention in clinical practice and future research.

## 552 | Pre-treatment cognitive complaints and objectively-measured attentional function following treatment for breast cancer

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**Background/rationale or Objectives/purpose:** This study aimed to prospectively cognitive function using self-reported and neuropsychological measures and to examine the association between self-reported evaluation of cognition and attention network test (ANT) performance in women treated for breast cancer over one year.

**Methodology or Methods:** Of 180 women receiving surgery for non-metastatic breast cancer, 140 were completed the ANT and self-reported questionnaires of perceived cognitive function, fatigue, and depression before any adjuvant treatment (baseline) and 5 and 12 months after baseline. These participants were divided into four groups depending on treatment modalities. A mixed model for repeated measures was computed on mean accuracy and correct reaction time (RT) with within-subject factors (congruency, warning cue, period), one between-subject factor, and confounding covariates (age, education, cognitive complaints, fatigue, depression).

**Impact on practice or Results:** A repeated measures analysis of variance in the four-group model showed no significant group by time interaction for ANT performance and perceived cognitive complaints. In the liner mixed models established to test whether perceived cognitive function might predict behavioral performance on ANT, higher accuracy scores were significantly associated with lower levels of baseline cognitive complaints ( $p = .008$ ), flanker effect, time effect, higher education, younger age, and group effect. Longer reaction times were also associated with greater fatigue ( $p < .001$ ), higher levels of baseline cognitive complaints ( $p < .001$ ), and interaction between age and baseline cognitive complaints ( $p < .001$ ).

**Discussion or Conclusions:** This finding indicates that pre-treatment cognitive complaints are linked with changes in ANT performance regardless of treatment modalities. Early assessment of cognitive complaints may be useful to prevent and manage persistent cognitive dysfunction following treatment for cancer.

## 525 | Status and predictors of planning ability in adult long-term survivors of CNS and other types of childhood cancer

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**Background/rationale or Objectives/purpose:** Long-term childhood cancer survivors' (CCS) quality of life can be impacted by late effects such as cognitive impairment. Especially survivors of CNS tumor are assumed to be at risk, but reports of cognitive tests in CCS with survival times >25 years are scarce.

**Methodology or Methods:** We assessed planning ability, a capacity closely related to fluid intelligence, using the Tower of London-test. We drew from a register-based prospective trial investigating long-term childhood cancer survival to compare 122 CNS tumor survivors, 829 survivors of other cancers (drawn from a register-based sample of adult long-term CCS), and 215 healthy controls (using sex-specific one-way ANOVAs and t-tests). Associations of CCS' planning ability with medical and psychosocial factors were investigated with a hierarchical linear regression analysis.

**Impact on practice or Results:** Mean planning ability did not differ between CCS and controls. However, female CNS tumor survivors performed worse than female survivors of other cancers and female controls. CNS tumor survivors of both sexes had a lower socioeconomic status, and fewer of them had achieved high education than other survivors. In the regression analysis, lower status and anxiety symptoms were associated with poor planning, suggesting possible mediators of effects of disease and treatment.

**Discussion or Conclusions:** The results indicate the necessity to contextualize test results, and to include cognitive and psychological assessments into aftercare. They also underscore the potential which is offered by systematic screening and intervention efforts, for instance as part of long-term follow-up care: Adequate support can alleviate suffering and enable survivors to exploit their full potential.

## 486 | An Innovative Bench to Bedside Pipeline to Guide Selection and Testing of Patient Reported Outcomes (PROs) for Personalized Symptom Management

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**Background/rationale or Objectives/purpose:** Patient-Reported Outcome Measures (PROMs) are a common mechanism globally to ascertain the impact of health care on health outcomes, with additional goals of utilizing such PROMs to direct clinical care, and for tailoring interventions as part of personalized medicine. PROMs are standardized, validated questionnaires completed by patients to measure their perceptions of health status and/or functional well-being. In this presentation, we provide an overview of PROMs research and case examples of PROMs testing for accurate detection of complex cancer symptoms i.e. breathlessness, insomnia and fatigue and their feasibility and acceptability in routine clinical care.

**Methodology or Methods:** On-PROST has developed a unique bench to bedside research pipeline that has addressed the need for a cost-efficient applied research enterprise that has accelerated field testing of PROMs for use in routine oncology practice; and to guide clinical decision making in PRO selection. This bench to bedside approach was

applied to guide the selection of PROMs for use in routine clinical care in diverse cancer patients and will be highlighted as key approach to PROMs uptake for other cancer organizations.

**Impact on practice or Results:** A range of PROMs have been identified and tested for detecting with accuracy core problems in functioning, swallowing problems in head and neck cancer, sexual dysfunction in prostate cancer, cognitive impairment; and the performance of PROMIS and PRO-CTCAE measures compared to legacy measures.

**Discussion or Conclusions:** PROMs are at the heart of a person-centered care system and their integration with other genomic and biomedical data is essential to a personalized cancer medicine and precision supportive care.

#### 481 | Reciprocal relationship between year-long change trajectories of sleep quality and depressive symptoms in breast cancer survivors following primary treatment

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**Background/rationale or Objectives/purpose:** Breast cancer survivors are at an increased risk of poor health following diagnosis and treatment. Oftentimes, health symptoms are studied in isolation and are rarely explored concomitantly. Yet it is important to examine how prominent health symptoms relate over time. Depression and sleep are prevalent health concerns that may lead to long term challenges among breast cancer survivors. This study examined the reciprocal relationship between year-long trajectories of change in sleep quality and in depressive symptoms among breast cancer survivors in the early post-treatment period.

**Methodology or Methods:** A sample of 201 breast cancer survivors ( $M_{age} = 55.01$ ,  $SD = 10.96$  years) reported their sleep quality and depressive symptoms five times over a one-year period following breast cancer treatment. Conditional parallel process latent growth modelling was used to test our hypotheses, with baseline age, breast cancer stage, and time since treatment as covariates.

**Impact on practice or Results:** The model fit statistics were:  $MLR\chi^2 = 90.86$  (47),  $p < .05$ ;  $TLI = .90$ ;  $CFI = .94$ ;  $RMSEA = .07$  (90% CI = .05 to .09). Initial sleep quality predicted variability in change trajectories of depressive symptoms ( $b = -.21$ ,  $p < .05$ ) and initial depressive symptoms predicted variability in change trajectories of sleep quality ( $b = -.58$ ,  $p < .01$ ). Poor sleep quality immediately following treatment was associated with higher levels of depressive symptoms over time and depressive symptoms at baseline were associated with poorer sleep quality across the year.

**Discussion or Conclusions:** This reciprocal relationship between breast cancer survivors sleep quality and depressive symptoms over time following primary treatment should be considered within clinical practice.

#### 399 | The Impact of Genetic Predispositions to Depression and Inflammation on the Development of a Sickness Behavior Syndrome in Head and Neck Cancer Patients Immediately Post-Treatment

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**Background/rationale or Objectives/purpose:** The primary purpose of this study was to investigate the contribution of genetic predispositions to inflammation and depression, as measured through polygenic risk scores (PRS), on levels of sickness behavior symptoms in head and neck cancer (HNC) patients in the immediate post-treatment period (i.e., at three months post-diagnosis), as well as on 6- and 12-month survival.

**Methodology or Methods:** Prospective longitudinal study of 223 consecutive adults (72% participation) newly diagnosed with a first occurrence of primary HNC, including saliva samples analyzed using the Illumina PsychChip, validated psychometric measures, Structured Clinical Interviews for DSM Disorders, and medical chart reviews.

**Impact on practice or Results:** Level of sickness behavior (SB) at 3 months was predicted by ( $r^2$  adj. = 0.42,  $p = 0.000$ ): a baseline SCID-I Anxiety Disorder (OR = 1.64, 95%CI = 0.37–2.91,  $p = 0.01$ ), baseline level of HADS anxiety (OR = 0.16, 95%CI = 0.02–0.30,  $p = 0.03$ ), the PRS for inflammation (OR = -0.11, 95%CI = -0.20–0.02,  $p = 0.02$ ), cumulated dose of radiotherapy (OR = 0.001, 95%CI = 0.00–0.002,  $p = 0.02$ ), and SB at baseline (OR = 0.32, 95%CI = 0.07–0.57,  $p = 0.01$ ). Patients with a higher PRS for depression (O.R. = 237.40,  $p = 0.047$ ) and lower level of education (O.R. = -1.90,  $p = 0.045$ ) presented lower survival at 6 months in a logistic regression adjusting for socio-demographic and medical variables (97.5% prediction; 100% survival; 55.6% death). PRS for depression significantly predicted baseline HADS anxiety ( $r = 0.19$ ,  $p = 0.02$ ).

**Discussion or Conclusions:** Our results outline three pathways of the sickness behavior: a genetic predisposition towards low inflammation; a genetic predisposition towards depression with an impact on anxiety upon diagnosis; and a treatment-related response to radiotherapy treatments. One may want to investigate early interventions in these areas to alleviate physical symptom burden in patients with HNC.

#### 374 | Temporal trends in, and predictors of, swallowing and social eating outcomes in head and neck cancer patients: a longitudinal study

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**Background/rationale or Objectives/purpose:** Difficulties with swallowing and eating are top priority concerns among head and neck cancer (HNC) survivors. In a large, longitudinal HNC dataset, we assessed temporal trends in swallowing and trouble with social eating and identified factors associated with these outcomes over the first year post-diagnosis.

**Methodology or Methods:** Data from the Head and Neck 5000 prospective clinical cohort study was used. Outcomes were measured pre-treatment and at 4 and 12-months follow-up using the EORTC QLQ-H&N35 swallowing and trouble with social eating sub-scales. Responses were transformed into a score (0–100); higher scores represent more severe symptoms. Mixed-effects linear multivariable regression was used to investigate time trends and predictors of each outcome.

**Impact on practice or Results:** Swallowing scores worsened from pretreatment (mean = 13.4,  $sd = 21.1$ ) to 4-months (mean = 24.1,  $sd = 27.7$ ) and improved slight at 12-months (mean = 15.5,  $sd = 21.0$ ). Trouble with social eating scores followed a similar pattern. After adjusting for stage and treatment, significant predictors of worse swallowing over time were: younger age, non-white ethnicity, not being married/cohabiting, higher deprivation, smoking, comorbidities, and being HPV16 E6 negative. Social eating outcomes over time were significantly worse in those with oral cavity tumours, higher stage disease and non-surgical treatments. They were better in older patients, males, those married/cohabiting and the less deprived.

**Discussion or Conclusions:** This analysis shows how HNC patients fare over time in terms of swallowing and social eating and identifies subgroups at risk of poor outcomes. This type of information can inform treatment decision-making and expectations about recovery and can indicate patient groups who may require additional support.

### 346 | The association of fear of progression and return to work among breast cancer patients

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**Background/rationale or Objectives/purpose:** Fear of progression (FoP) is a psychological strain in breast cancer patients (BCPs) and can affect quality of life. One dimension of quality of life is the ability to work. In case of BCPs this means a successful return to work (RTW) after treatment. This study aims to investigate the association between FoP and RTW in BCPs.

**Methodology or Methods:** In a longitudinal study in Germany (2013 to 2014) female BCPs who worked before diagnosis, were surveyed three times: after surgery, after 10 and 40 weeks. Logistic and linear regression analyses were applied to estimate the association of (a) RTW and (b) the number of career changes at T3 with FoP, sociodemographic and disease-related variables.

**Impact on practice or Results:** N = 675 BCPs were included. The patients' mean age was 51 years (SD = 7.6). 15.8% of the patients showed low, 67.6% moderate and 16.5% high levels of FoP. At T3 34.6% of the BCPs did not return to their previous workplace and 20.4% reported at least one career change. FoP was significantly negatively associated with RTW (OR = 0.96; 95%-CI = 0.93 – 0.99; Pseudo-R<sup>2</sup> = .27). Women with moderate levels of FoP reported more career changes (b = .14; p = 0.052) than women showing low or high levels.

**Discussion or Conclusions:** The findings show a negative relationship between FoP and RTW among BCPs. Moderate levels of FoP are associated with more career changes, which can be interpreted as an adaption to subjective worries, well-being or priorities, whereas patients with high FoP rather do not return to employment.

### 318 | Clinical Dilemmas in Evaluating and Treating Sleep Disorders in Cancer

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**Background/rationale or Objectives/purpose:** Cancer often results in sleep disorders. Impairment in sleep disrupts biological processes, cognition, mood processing, and DNA repair. Sleep disorders are distressing for patients and families, exacerbating mood, pain and fatigue. Patients with cancer and sleep disturbances may benefit from treatment. Several meta-analyses and systematic reviews have examined the efficacy of non-pharmacologic and pharmacologic interventions to improve sleep disturbances occurring with cancer. Sleep disruptions can persist years after completion of cancer treatment, highlighting the importance of early diagnosis and treatment.

**Methodology or Methods:** While the prevalence of sleep disorders in patients living with cancer is high, there is a gap in diagnosis and treatment. In cancer, the diagnosis of sleep impairment is multifactorial given the multitude of effects from treatment. Here we consider the evidence supporting the assessment of sleep disorders in cancer and also identify interventions with shown efficacy.

**Impact on practice or Results:** This session will encourage cancer care providers to methodically evaluate their patients for sleep disturbances distinct from other conditions in their cancer illness. Additionally, the challenges related to pharmacological management, such as benzodiazepines, will be discussed and a treatment protocol will be proposed.

**Discussion or Conclusions:** Sleep disorders are prevalent in the cancer illness experience and thereafter. As more successful treatment becomes available and patients with cancer live longer, the impact of sleep on cognition should be underscored. In cancer, sleep impairment is particularly salient when they interfere with clinical decision making and treatment outcomes. Future guidelines integrate evaluation and treatment of sleep disorders in cancer for early intervention.

### 284 | Psychosocial Treatment Strategies for Multi-Symptom Management

*Kristine Kwekkeboom, Ann Wieben, Sarah Loring, Jen Stevens, Lauren Tostrud*

*University of Wisconsin, Madison, USA*

**Background/rationale or Objectives/purpose:** Persons with cancer experience multiple co-occurring symptoms, but most practice guidelines focus on only a single symptom, such as pain or fatigue. As a result, patients receive recommendations for multiple treatment strategies and must learn to manage or prioritize among them. A coordinated effort, identifying treatment strategies that may be effective for multiple symptoms, would be more efficient and less burdensome for patients. The purpose of this review was to identify psychosocial treatment strategies with evidence of efficacy for multiple (two or more) symptoms.

**Methodology or Methods:** We reviewed 29 evidence-based practice guidelines published by the Oncology Nursing Society, the National Comprehensive Cancer Network, and the American Society of Clinical Oncology and identified the psychosocial treatment strategies recommended for any of 15 common cancer-related symptoms. We categorized treatment strategies as physical, psychological, behavioral, or complementary/alternative approaches. For each symptom, we assessed agreement across the guidelines with respect to the treatment recommendations. Treatment strategies were then evaluated across the 15 symptoms to identify those recommended for two or more symptoms.

**Impact on practice or Results:** In total, the guidelines recommended 65 psychosocial symptom management strategies. Forty-five of those were recommended for multiple symptoms. Treatment strategies recommended across the greatest number of symptoms included exercise, massage, cognitive-behavioral therapy, psychoeducation, relaxation, and acupuncture/acupressure.

**Discussion or Conclusions:** Although typically organized by symptom, practice guidelines suggest that many psychosocial strategies have beneficial effects across multiple symptoms. Clinicians should carefully assess co-occurring symptoms and select treatment strategies with efficacy across reported symptoms. Further development and testing of patient-centered interventions is necessary to improve multi-symptom management.

### 283 | Work Limitations in Persons with the Pain, Fatigue, and Sleep Disturbance Symptom Cluster During and After Cancer Treatment

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**Background/rationale or Objectives/purpose:** Illness- and treatment-related symptoms negatively impact cancer survivors' ability to work during and after treatment. While symptom burden in general is associated with work ability, the effect of cancer symptom clusters is unknown. Co-occurring pain, fatigue, and sleep disturbance form a common cancer symptom cluster that restricts functional status. Unlike the cancer or therapy, these symptoms are modifiable. This analysis was conducted to compare work ability and limitations among survivors with and without the symptom cluster.

**Methodology or Methods:** Adults (N = 111) intending to work during or after cancer treatment completed the MD Anderson Symptom Inventory, Work Ability Index, and Work Limitations Questionnaire at



baseline (before 2nd chemotherapy cycle), end of treatment, 3-, 6-, and 12-months post-treatment. At each time point, participants reporting pain, fatigue, and sleep disturbance (all  $\geq 1$ , 0–10 scale) were considered to have the symptom cluster. T-tests compared work ability and limitations between those with and without the symptom cluster.

**Impact on practice or Results:** The symptom cluster was present in 45–63% of survivors during the study period. All participants reported reduced work ability and limitations at baseline and completion of treatment that improved at 3-, 6-, and 12-months post-treatment. Survivors with the symptom cluster reported significantly poorer work ability and/or more limitations than those without the symptom cluster at all points except completion of radiotherapy and 12 months post-treatment.

**Discussion or Conclusions:** The pain, fatigue, sleep disturbance cancer symptom cluster had work ability implications for nearly one year post-treatment. Screening for the symptom cluster and interventions coordinated to manage co-occurring symptoms might reduce cancer survivors' work limitations.

## 272 | Anxiety of Breast Cancer Patients with Radiotherapy and Its Relationship with Set-up Error

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**Background/rationale or Objectives/purpose:** To assess the anxiety level and symptom severity of breast cancer patients (BCP) during the radiotherapy. And to explore the trajectory of the anxiety and the relationship between anxiety and radiotherapy set-up error.

**Methodology or Methods:** 102 BCP who received radiotherapy for first time were evaluated at three time points before the first radiotherapy (T1), the middle radiotherapy (T2), and the last radiotherapy (T3) by Self-Rating Anxiety Scale (SAS), State-Trait Anxiety Inventory (STAI) and the MD Anderson Symptom Inventory (MDASI). The radiotherapy set-up error was obtained in millimeters by comparing the real-time isocratic verification film with the digitally reconstructed radiograph (DRR) in the treatment planning system.

**Impact on practice or Results:** BCP experienced the highest anxiety level at T1, significantly higher than T2[(40.8  $\pm$  9.1) VS (35.6  $\pm$  8.7),  $P < 0.001$ ] and T3[(40.8  $\pm$  9.1) VS (35.0  $\pm$  9.5),  $P < 0.001$ ]. The SAI average score at T1 was also significantly higher than T2[(34.1  $\pm$  10.8) VS (27.7  $\pm$  9.1),  $P < 0.001$ ] and T3[(34.1  $\pm$  10.8) VS (28.4  $\pm$  9.8),  $P < 0.001$ ]. There were significant differences on the risk of radiotherapy set-up error between BCP with and without anxiety at T1 ( $c^2 = 5.597$ ,  $P < 0.05$ ). Anxiety, cognitive attention, appetite, drowsiness, sadness, shortness of breath, and the degree of interference of symptoms on walking were the influencing factors of radiotherapy set-up error (all  $P < 0.05$ ).

**Discussion or Conclusions:** BCP experienced the highest level of anxiety before the first radiotherapy. Patients with anxiety before the first radiotherapy have a higher risk of bigger set-up errors during radiotherapy.

## 270 | Self-reported Sexual Problems Predict Higher Levels of Depression, Anxiety, and Suicide in Cancer Patients

*Mary Hughes, Richard De La Garza*

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**Background/rationale or Objectives/purpose:** The current study was designed to evaluate the prevalence of sexual problems and the extent to which this impacted mood symptoms and suicide ideation in cancer patients.

**Methodology or Methods:** All patients seen from July 2014 - February 2017 in the outpatient psychiatry clinic who provided informed consent were included ( $N = 2,130$ ). Assessment tools include the Patient Health Questionnaire-9 (PHQ-9) to measure depression and question 9 to evaluate suicidal ideation, the Generalized Anxiety Disorder scale (GAD-7) to measure anxiety, the NCCN Distress Management Thermometer (DT) and Checklist to measure distress (as a binomial Yes/No variable). Demographic variables included age, race/ethnicity, marital status and cancer diagnosis.

**Impact on practice or Results:** Patients were  $52.9 \pm 13.2$  years of age, and female (68%), Caucasian (76%) and in a committed relationship (63%). The most common cancer diagnosis was breast (30%). Overall, 27.3% patients endorsed (specified Yes) "sexual problems" on the DT checklist. Patients who endorsed sexual problems had significantly higher levels of depression ( $12.4 \pm 5.8$  vs.  $9.8 \pm 5.8$ ,  $F_{1,2128} = 85.1$ ,  $p < .0001$ ), anxiety ( $10.9 \pm 5.9$  vs.  $8.6 \pm 5.7$ ,  $F_{1,2128} = 74.2$ ,  $p < .0001$ ) and suicidal thoughts ( $X^2 = 52.1$ ,  $p < .0001$ ).

**Discussion or Conclusions:** The data indicate that one quarter of all patients seen endorsed sexual problems and exhibit significantly greater levels of depression, anxiety, and suicidal ideation. If the patient with cancer endorses sexual problems it is important to assess the patient for anxiety, depression, and suicidal ideation. If the patient is anxious they need to be assessed for sexual dysfunction. Knowing that these can appear together can remind the clinician to assess sexuality, an important quality of life issue

## 260 | Hormonal Correlates to Visual Attention in Men—Implications to Helping Prostate Cancer Patients Understand and Adapt to Androgen Deprivation Therapy

*Samantha T. S. Wong<sup>1</sup>, Erik Wibowo<sup>2</sup>, Richard J. Wassersug<sup>1,3</sup>, Jaime Palmer-Hague<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** About half of all men treated for prostate cancer (PCa) will be on androgen deprivation therapy (ADT) at some time during their lives. This treatment reduces men's libido and decreases their ability to have and maintain erections. However there are no standardized, objective and non-invasive ways to quantify the extent to which gonadal hormones influence visual attention to sexual cues, and little is known about how gonadal hormones modulate cognitive processes that underlie sexual interest in the PCa population.

**Methodology or Methods:** We have previously used an eye-tracking protocol with images of runway models wearing either swimsuits (sexy) or fully clothed (non-sexy) to demonstrate that PCa patients on ADT exhibit fewer gaze fixations on sexy images than age-matched men not on ADT.

**Impact on practice or Results:** We present additional data from 25 men [healthy men (12) and PCa patients currently on ADT (6) or not on ADT (12)] who provided blood samples that for measurements of testosterone, estradiol, and sex-hormone binding globulin (SHBG) serum concentrations. Before the blood samples were taken, we used the eye-tracking protocol to measure automatic and controlled visual attentions to the sexy and non-sexy images. The protocol involved an ethics board-approved deception that allowed us to collection the data without informing the patients in advance that visual attention to sexual stimuli was being assessed. The data confirmed that gaze fixation patterns correlate with T, estradiol, SHBG.

**Discussion or Conclusions:** Understanding the mechanisms through which hormones impact sexual cognition is a prelude to developing interventions for men who are affected by PCa treatments.

### 231 | A Prospective Analysis of Insomnia and Subjective Cognitive Impairment in Men with Prostate Cancer on Androgen Deprivation Therapy

*Sheila N. Garland<sup>1</sup>, Josée Savard<sup>2</sup>, Sarah L. Eisel<sup>3</sup>, Richard Wassersug<sup>4</sup>, Nicholas J. Rockwood<sup>5</sup>, John Thoms<sup>1</sup>, Heather S. L. Jim<sup>3</sup>, Brian D. Gonzalez<sup>3</sup>*

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**Background/rationale or Objectives/purpose:** Androgen deprivation therapy (ADT) is related to subjective cognitive impairment (CI) in men with prostate cancer (PCa). This study examined whether insomnia symptoms mediate the relationship between ADT and CI and whether depressive symptoms, fatigue severity, and physical activity moderate the strength of this relationship.

**Methodology or Methods:** ADT recipients (n = 83) were compared to matched men with PCa not on ADT (n = 92) and healthy controls (n = 112). Participants were assessed before or within one month of starting ADT as well as 12 and 24 months later. Self-reported cognitive impairment and satisfaction was assessed using the Everyday Cognition Scale. Insomnia was assessed using the Insomnia Severity Index. Multilevel mediation analyses were conducted to estimate the indirect effect of ADT on CI through insomnia symptoms. Exploratory moderated mediation analyses assessed whether the indirect effect of ADT on CI through insomnia symptoms was dependent on levels of fatigue, depression, or physical activity.

**Impact on practice or Results:** Insomnia symptoms significantly mediated the relationship between receipt of ADT on subjective cognitive function ( $p < .001$ ) and satisfaction with cognition ( $p < .001$ ), after controlling for medical comorbidities. Men with greater fatigue had a more pronounced association of ADT with insomnia severity. Conversely, men with greater depressive symptoms had a stronger association between insomnia severity and cognitive function. Physical activity was not a significant moderator of the relationship between ADT and CI.

**Discussion or Conclusions:** Insomnia was associated with worse cognitive function in men on ADT. Interventions to address insomnia, fatigue, and depression may improve subjective CI.

### 230 | Pain, cannabis use, and cancer status: A Canadian population-based study

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**Background/rationale or Objectives/purpose:** There is limited evidence regarding cannabis use among cancer patients and survivors who experience pain. The research objective was to evaluate the association between self-reported pain and cannabis use in a Canadian population-based sample.

**Methodology or Methods:** Data from the Canadian Community Health Survey (2011–2012; 2013–2014), with a sample of 59,036 respondents, was analyzed with multivariable logistic regression analysis, stratified by self-reported cancer status (previous, current or no cancer) and adjusted for the confounding effects of sociodemographic factors. Estimates were probability weighted using pooled sampling weights from Statistics Canada.

**Impact on practice or Results:** Pain that prevented activity was reported by 16.4% of respondents, while 6.1% reported pain that did not prevent activity. Cannabis use greater than one time in the past 12 months was reported by 12.0% of respondents. After adjusting for confounders, pain that prevented activity was associated with a significantly increased odds of cannabis use among respondents in the previous cancer stratum (adjusted odds ratio [OR] = 3.75, 95% confidence in-

terval [CI] 2.20–6.41) and less so in the non-cancer stratum (adjusted OR = 1.65, 95% CI 1.44–1.89). Non-significant decreased odds were observed in the current cancer stratum (adjusted OR = 0.90, 95% CI 0.40–2.00).

**Discussion or Conclusions:** This is the first Canadian, population-based estimate of the relationship between pain, cannabis use, and cancer status. In particular, these results suggest a strong association between pain and cannabis use among cancer survivors. Considering the recent legalization of cannabis in Canada, this study highlights the importance of integrating questions about cannabis use into the clinical assessments of cancer survivors.

### 193 | PSYCHOLOGICAL FACTORS ASSOCIATED WITH CHEMOTHERAPY-INDUCED NAUSEA: AN EXPLORATIVE STUDY IN A SAMPLE OF GYNECOLOGICAL CANCER PATIENTS

*Valentina Di Mattei<sup>1,2</sup>, Letizia Carnelli<sup>2,3</sup>, Martina Mazzetti<sup>2</sup>, Paola Taranto<sup>2</sup>, Martina Bernardi<sup>4</sup>, Mariachiara Parmigiani<sup>2</sup>, Gaia Perego<sup>3</sup>, Amedea Dehò<sup>1</sup>, Paola MV Rancoita<sup>5</sup>, Massimo Candiani<sup>6,7</sup>*

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**Background/rationale or Objectives/purpose:** Despite improvements in antiemetic prophylaxis, Chemotherapy-Induced Nausea (CIN) still represents one of the most distressing side effects of chemotherapy treatment. Previous studies showed that psychological factors may be involved in the development of both acute and delayed nausea. The current study aimed to investigate the role of anxiety and coping strategies in the prediction of CIN.

**Methodology or Methods:** One hundred and sixty-five patients (mean age = 58.23, SD = 13.19) treated for gynecological cancer at the San Raffaele Hospital completed the State-Trait Anxiety Inventory and the Coping Orientation to Problems Experienced. Data concerning nausea was collected after the first and the third chemotherapy infusion using the MASCC Antiemesis Tool (MAT). Logistic regression analyses were performed; p-values of  $< 0.05$  were considered significant.

**Impact on practice or Results:** Both anxiety and coping strategies are involved in the development of delayed nausea; no association was found with acute nausea at both infusions. Specifically, a higher state anxiety represents a risk factor for delayed CIN (OR = 1.030,  $p = .020$ ) after the first infusion of chemotherapy; having a higher problem-focused coping style is a risk factor (OR = 1.062,  $p = .022$ ) for delayed CIN after the third infusion.

**Discussion or Conclusions:** This study found that patients' psychological characteristics represent risk factors for developing delayed nausea during chemotherapy treatment. In order to contrast CIN, the influence of patient-related risk factors should be considered, along with those related to treatment: specific psychological interventions aimed at encouraging more adaptive coping strategies and at managing anxiety could in turn help to control CIN.

### 160 | Applying the conceptual framework for action on the social determinants of health to a Canadian late-effects clinic for adult survivors of childhood cancer

*Sharon Paulse, MSW, RSW, CCLS, Bronwyn Barrett, MSW, RSW, Melanie McDonald, MSW, RSW*  
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**Background/rationale or Objectives/purpose:** The World Health Organization's conceptual framework for action on the social determinants of health (CSDH) offers a broad, systems analysis of issues affecting the health of populations and individuals (Solar, 2010). This presentation will review the CSDH and apply this theoretical model to issues faced by adult survivors of childhood cancer at LEAF (Late Effects, Assessment and Follow-up) Clinic in British Columbia, Canada.

Late-effects of childhood cancer treatment present an array of issues, including premature aging, chronic health conditions, cognitive and emotional health challenges (Hudson, 2018) and financial dependence (Teckle, 2018). Adult survivors are also situated within political contexts which determine their eligibility and access to services.

**Methodology or Methods:** This presentation will apply the CSDH to a case study in order to highlight priorities and perspectives of patients, their families, and health care professionals.

**Impact on practice or Results:** This framework helps to analyze the expectations and realities of patients and their families as they attempt to navigate services which directly impact health, but which fall outside of the current scope and budget of the health system.

**Discussion or Conclusions:** The CSDH can help health care professionals to understand and to frame discussions of intersecting issues, competing practice priorities within their organizational and political structures and to explore potential advocacy strategies.

## 122 | Psychological and Physical Correlates of Insomnia Symptoms in Men with Prostate Cancer

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**Background/rationale or Objectives/purpose:** Many men with prostate cancer (PCa) experience insomnia symptoms (InS). We aimed to investigate factors associated with InS in men with PCa.

**Methodology or Methods:** Men diagnosed with PCa were invited to complete an online survey of sleep, physical, sexual, and psychological functioning. Cancer organisations and support groups distributed this survey via social media and mailing lists.

**Impact on practice or Results:** 142 men with PCa [39.4% had received radiotherapy, 59.2% prostatectomy, 33% androgen deprivation therapy (ADT)] participated. 54.8% and 70.2% of patients, who had and had not received ADT respectively, reported InS ( $\geq 8$  Insomnia Severity Index score). Men who had been on ADT [70 years old (IQR = 11)] had significantly worse sleep due to hot flashes ( $P < 0.001$ ), bother due to waking up to urinate ( $P < 0.01$ ), fatigue ( $P < 0.01$ ), sexual function ( $P < 0.001$ ), crying ( $P < 0.001$ ) and feeling sad ( $P < 0.05$ ) than ADT-naïve patients [68.5 years old (IQR = 13.5)]. Men on ADT with InS experienced worse urinary symptoms ( $P < 0.05$ ), fatigue ( $P < 0.05$ ), and anxiety ( $P < 0.01$ ). ADT-naïve patients with InS had worse daytime sleepiness ( $P < 0.05$ ), urinary bother ( $P < 0.01$ ), fatigue ( $P < 0.01$ ), anxiety ( $P < 0.01$ ), depression ( $P < 0.01$ ) and orgasmic function ( $P < 0.05$ ). Regardless of treatment type, men with InS more frequently went to bed "feeling stressed, angry, upset or nervous", and "thought, planned or worried when in bed" than patients without InS (both  $P$ s  $< 0.05$ ). Physically active patients on ADT had less problems with waking up too early than those who were less physically active ( $P < 0.05$ ).

**Discussion or Conclusions:** InS is associated with poorer quality of life outcomes in men with PCa and should be a focus of intervention.

## 28 | Screening for Cancer-Related Symptoms: Sensitivity and Specificity of Screening Tools for a Trial Testing a Collaborative Care Intervention

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**Background/rationale or Objectives/purpose:** Brief instruments to screen patients for clinical levels of cancer-related symptoms are needed to facilitate the targeting of interventions to patients with the greatest severity of symptoms. The aims of this study were to examine the sensitivity and specificity of screening tools used to assess cancer-related symptoms.

**Methodology or Methods:** Patients were screened for cancer-related symptoms with brief instruments and then assessed again approximately 2–3 weeks later using widely used reliable and valid instruments to assess cancer-related symptoms. Sensitivity and specificity analyses and Area Under the Receiver Operator Curve (AUROC) analyses were performed.

**Impact on practice or Results:** A total of 507 patients were screened for symptoms of pain, depression, and fatigue. No differences by gender [Chi-square = 1.51,  $p = 0.469$ ], race [Chi-square = 11.2,  $p = 0.509$ ], or diagnosis [Chi-square = 2.5,  $p = 0.92$ ] with regard to those who enrolled in the clinical trial, however younger patients were more likely to enroll in the intervention [ $F(1,362) = 4.8$ ,  $p = 0.03$ ]. Good to poor sensitivity and excellent specificity was observed for the screening of depressive symptoms (0.77 and 0.85), pain (0.47 and 0.91), and fatigue (0.11 and 0.91). The AUROC for depressive symptoms = 0.86 (95% CI = 0.80–0.92), pain = 0.75 (95% CI = 0.67–0.83), and fatigue = 0.40 (95% CI = 0.31–0.50) was good to poor. Using AUROC, the best cut point for depressive symptoms was 15.5 (Sensitivity = 0.85; Specificity = 0.77), for pain was 4.5 (Sensitivity = 0.81; Specificity = 0.662); and for fatigue was 2.5 (Sensitivity = 0.91; Specificity = 0.11).

**Discussion or Conclusions:** The 20 item CES-D and a 0–10-point scale for pain were adequate to screen patients diagnosed with cancer. However, the use of a 0–10-point scale for fatigue was not recommended.

## U. THEORY BUILDING IN CLINICAL RESEARCH

### 504 | A Grounded Theory of How Patients Process their Cancer Experiences through a Mindfulness-based Expressive Arts Group

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**Background/rationale or Objectives/purpose:** Given the challenges associated with cancer diagnosis and treatment, there is a growing interest in mindfulness-based expressive arts group interventions (MBAIs) for promoting patients' well-being. Our study objective was to develop a theoretical understanding of how patients with cancer experience, utilize, and draw meaning from an MBAI.

**Methodology or Methods:** We used constructivist grounded theory to explore how patients process their cancer experiences through an MBAI. Participants ( $N = 23$ ) had participated in CancerCare Manitoba's Expressive Arts Group. We gathered narrative descriptions of their experiences through semi-structured interviews and field notes. Participants brought their artwork to facilitate art elicitation. Data were analyzed with grounded theory methods.

**Impact on practice or Results:** Our resulting grounded theory provides insight into the plausible mechanisms for the group's therapeutic processes and outcomes. Participants described how mindfulness enabled them to let go of their ruminations and calm their minds so they could fully engage in expressive arts activities. Participants found inspiration for artistic expressions while meditating, and expressed themselves in new ways in their artwork. This process of mindfulness and art making within a group context became a powerful way of discovering and



processing hidden thoughts and emotions. Although it was challenging work, it created a unique healing space for numerous meaning-making processes and fostered a transformative group experience for many. Our presentation will include a PechaKucha which incorporates participants' artwork to illuminate these findings.

**Discussion or Conclusions:** These findings provide a strong theoretical foundation that will enable researchers and practitioners to design and implement more effective mindfulness-based expressive arts programs.

#### 464 | Cognitive-Attentional Processes as Predictors of Fear of Cancer Recurrence at the End of Breast Cancer Treatment

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**Background/rationale or Objectives/purpose:** Fear of cancer recurrence (FCR) is highly prevalent among patients and disrupts their daily functioning. Hence, researchers took an interest in cognitive-attentional processes implied in the development of FCR. The aim of this study was to assess relationships between potential cognitive-attentional predictors (i.e., worry, intolerance of uncertainty, maladaptive metacognitions, intrusive thoughts, and attentional bias (AB)) and FCR in a post-treatment breast cancer population.

**Methodology or Methods:** Seventy-four patients treated for a non-metastatic breast cancer were encountered at the end of active treatment. Patients completed self-report questionnaires using Fear of Cancer Recurrence Inventory-Short Form (FCRI-SF), Penn State Worry Questionnaire, Intolerance of Uncertainty Inventory-Part A, Metacognitions Questionnaire-30, and White Bear Suppression Inventory, and a dot-probe task assessing AB towards negative, positive, and neutral cancer related or unrelated words presented for 17, 500, and 1500 milliseconds.

**Impact on practice or Results:** Results showed a significant correlation between FCR and worry ( $r = .551; p < .001$ ), intolerance of uncertainty ( $r = .418; p < .001$ ), maladaptive metacognitions ( $r = .384; p < .001$ ), and intrusive thoughts ( $r = .359; p < .001$ ). Worry ( $b = .081; p = .015$ ) and intolerance of uncertainty ( $b = .056; p = .044$ ) significantly predicted FCR in a logistic stepwise regression (FCRI-SF cut-off  $\geq 13, R^2 = .255$ ). No correlation was found between FCR and AB. However, all patients showed an AB towards negative cancer related words presented for 17 milliseconds ( $F = 8.802; p = .004$ ).

**Discussion or Conclusions:** Worry and intolerance of uncertainty both predicted FCR. Therefore, interventions designed to reduce FCR should specifically address these predictors. Moreover, the presence of an automatic AB towards cancer threat provided support for the use of attention training technique in a post-treatment breast cancer population. Further research is still needed to disentangle automatic versus strategic processing in AB.

#### 340 | APOE e4 as a moderating risk factor for cancer related cognitive impairment – a systematic review

*Cecilie Rask Buskbjerg<sup>1</sup>, Ali Amidi<sup>1</sup>, Ditte Demontis<sup>2</sup>, Eva Rames Nissen<sup>1</sup>, Robert Zachariae<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Cancer-related cognitive impairment (CRCI) is a commonly reported complaint among non-CNS cancer patients. A potential moderating risk factor for cognitive impairment is the gene APOE encoding the apolipoprotein isoform e4. In the present

study, we systematically reviewed the available studies evaluating APOE e4 as a moderating risk factor for CRCI.

**Methodology or Methods:** Keyword-based systematic searches were undertaken on July 24, 2018 in PubMed, Web of Science, The Cochrane Library, and CINAHL. Three authors independently evaluated full-texts of identified papers and excluded studies. Ten studies reporting results from nine independent samples were included. Two authors independently quality-assessed the included studies using the NIH Quality Assessment Tool. The review was preregistered with PROSPERO (CRD42018107689).

**Impact on practice or Results:** Six studies were rated “good quality” ( $>9$  out of 14 criteria met), and four studies were rated “fair quality” (5–9 criteria met). Four studies reported that carrying at least one e4 allele was associated with CRCI with odds ratios ranging from 1.42 (95% CI: 0.81–2.49) to 12.7 (95% CI: 5.26–27.67). Six studies found no association. The only clear-cut methodological differences were that studies that found an association had smaller sample sizes (mean  $N = 109$ ) and a larger amount of e4 carriers (mean = 26%) compared to studies that found no association (mean  $N = 248$ , mean % carriers = 20).

**Discussion or Conclusions:** While there is some evidence to suggest that variants encoding the e4 allele may act as moderating risk factors for CRCI, the literature is generally inconsistent and does not allow for clear-cut conclusions. Larger and more sufficiently powered studies are needed.

#### 174 | The role of fear of cancer progression in changing health behaviors before and after surgery of colorectal cancer

*Jaroslav Ocalewski<sup>1</sup>, Pawel Izdebski<sup>1</sup>, Michal Jankowski<sup>2</sup>, Wojciech Zegarski<sup>2</sup>*

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**Background/rationale or Objectives/purpose:** Research on fear of cancer progression (FoP) show its negative impact on human behavior. Whereas, the FoP seems to be a natural reaction to cancer and causes the fight or avoidance of the illness.

The aim of the study is to understand the relationship between FoP and health behaviors among people with colorectal cancer (CRC) before and after colorectal tumor resection. The research is conducted as a part of the grant funded by the National Science Center in Krakow (2017/25/N/HS6/01365) entitled The role of cognitive and emotional factors in adaptation to cancer

**Methodology or Methods:** The participants were Polish patients ( $N = 155$ ) at the age of 40–75 years, before (T1) and 6 months (T2) after the colorectal tumor resection at the Oncology Center in Bydgoszcz. The tools used to measure are: health behaviors (smoking, alcohol, eating habits, physical activities, stress), The Fear of Progression Questionnaire - Short Form (FoPQ-SF), The Brief Illness Perception Questionnaire (B-IPQ).

**Impact on practice or Results:** FoP is important to reduce unhealthy behaviors: alcohol consumption ( $r = -.19$ ), anti-healing food ( $r = -.24$ ) and it is insignificant for changes in the consumption of health-promoting products. High fear of illness progression is not conducive to physical activity, sleep quality. FoP isn't related with the time since the symptoms of cancer appeared before consultation by a physician.

**Discussion or Conclusions:** The occurrence of FoP may also have its profits, as it may determine whether patients engage in better coping with disease. FoP plays an important role in limiting anti-health behaviors such as alcohol consumption and unhealthy products.

#### 99 | Can socio-emotional selectivity theory help to tailor psychooncological interventions?

*Katrin R. Scharpf<sup>1,2</sup>, Saskia Höper<sup>1</sup>, Bernd Kasper<sup>2</sup>, Martin Bohus<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** Socio-emotional selectivity theory (SST, Carstensen 2006) postulates that motivational focus depends on time perspective, like expectation about remaining life span. With open future time perspective (FTP) humans focus on information gathering, whereas individuals with a restricted FTP focus on emotion regulation. We investigated whether SST can be used to differentiate psychooncological intervention strategies.

**Methodology or Methods:** To operationalize information search and emotion regulation, two items from our routine distress screening instrument (HSI) were examined. The sample included only those patients who died in the meanwhile (N = 454). Age did not differentiate the wish for psychooncological support. Younger patients' information gathering motivation was less satisfied by the medical staff (age split 67,  $p < .001$ ). Additionally, younger patients tended to have less often somebody to talk about their sorrows and thus a deficit in emotion regulation ( $p < .07$ ). A negative correlation between age and duration of psychooncological intervention was found ( $p < .001$ ).

**Impact on practice or Results:** Young and old patients showed similar needs for psychooncological counselling. However, younger patients have higher needs for information gathering and emotion regulation. Clinicians should be prepared and trained to those differential indications of interventions.

**Discussion or Conclusions:** Currently FTP was operationalized by the expected remaining life span (independent of oncological situation) which turned out relevant for the required psychological interventions as expected by SST. To investigate the usefulness of SST for tailoring interventions, questionnaires specifically designed to measure FTP should be tested. Emotion regulation should be examined in more sophisticated ways including specific psychotherapeutic manuals (e.g. Bohus et al., 2013).

## 82 | Understanding the role of psychological flexibility in depression and desire for hastened death in cancer patients

*Nicholas J. Hulbert-Williams, Dawid S. Budzynski, Liz Whelen*  
University of Chester, Chester, United Kingdom

**Background/rationale or Objectives/purpose:** Individuals diagnosed with cancer often suffer from distress and psychological comorbidities that remain unrecognized and can lead to increased suicidality or desire for hastened death. Predictors of this phenomenon remain largely unknown. This study explores the role of psychological factors and physical symptoms (e.g. sleep disturbance, pain) as predictors of depression and desire for hastened death.

**Methodology or Methods:** 138 cancer patients have been recruited for this cross-sectional study through a UK cancer charity and social media. Participants (male  $n = 52$ , female  $n = 85$ , not specified  $n = 1$ ) are over 16 years of age ( $M = 48.56$ ,  $SD = 16.02$ ) with a cancer diagnosis not restricted by site or stage (curative  $n = 93$ , palliative  $n = 33$ , unknown  $n = 12$ ). Participants completed questionnaire assessments of sleep disturbance, pain, fear of cancer progression, adjustment to cancer, hopelessness, psychological flexibility, wish to hasten death and depression.

**Impact on practice or Results:** Statistically significant correlations ( $p < .05$ ) were found between all outcome and predictor measures except cognitive avoidance and fighting spirit. Effect sizes were considerable, ranging from  $d = .2$  to  $d = .6$ . Preliminary analysis demonstrates that psychological flexibility may act as a moderator between fear of cancer progression and depression ( $R^2 = .40$ ,  $F(3,116) = 25.96$ ,  $p < .001$ ). No other moderating effects have been identified between remaining predictor and outcome variable relationships.

**Discussion or Conclusions:** Cancer patients struggle with a wide range of unmet needs that may require attention and support. Understanding the moderating role of psychological flexibility between fear of

cancer progression and depression may suggest a theoretical rationale for using Acceptance and Commitment Therapy (ACT) based interventions in cancer care.

## 43 | Adaptive and maladaptive emotions in patients with cancer: design of the EMOCA Study

*Joost Dekker*

*Amsterdam University Medical centers (VUmc), Amsterdam, Netherlands*

**Background/rationale or Objectives/purpose:** It is generally acknowledged that a distinction needs to be made between adaptive (normal) and maladaptive (psychopathological) emotions in response to a potentially traumatic event such as cancer. Current instruments to assess psychological distress fail to make this distinction, leading to major empirical inconsistencies. Identification of indicators distinguishing between adaptive and maladaptive emotions in patients with cancer is an urgent research priority.

We have developed hypotheses on indicators distinguishing between adaptive and maladaptive emotions. The hypotheses were derived from (i) the innovative 'network theory on mental disorders'; (ii) theory on 'emotion dynamics'; and (iii) theory on 'life goals and subjective well-being'. These hypotheses concern emotional symptoms with a negative valence (e.g., low mood) as well as a positive valence (e.g., hope).

**Methodology or Methods:** Patients are eligible to participate if they have a diagnosis of colorectal cancer (non-metastatic or metastatic disease). Patients are assessed 3 and 6 months after start of treatment with adjuvant or 1st line chemotherapy. We use a mobile phone to assess emotional symptoms, cancer-treatment related symptoms, and activities; patients are followed for two weeks. Life goals are assessed with an interview. Patients are categorized as having 'adaptive emotions' or 'maladaptive emotions', using a professional mental health interview, or patient's subjective need for professional mental health care.

**Impact on practice or Results:** We will identify indicators distinguishing between adaptive and maladaptive emotions.

**Discussion or Conclusions:** We expect this study to result in an innovative breakthrough. The indicators distinguishing between adaptive and maladaptive emotions can be used to tailor psychosocial care to the needs of patients with cancer.

## V. TRANSLATIONAL RESEARCH

### 291 | Smoking cessation care in oncology centres in Australia – what are the chances of effective implementation of evidence-based care in Australia?

*Christine Paul*

*University of Newcastle, Callaghan, Australia*

**Background/rationale or Objectives/purpose:** Despite evidence of improved outcomes for smoking cessation at or immediately following diagnosis, translation of smoking care into oncology practice is poor. The presentation aims to explore the available data on current practice alongside current initiatives to consider how evidence-smoking cessation care might be achieved in cancer care in Australia

**Methodology or Methods:** Data from recent Australian studies regarding smoking cessation care in oncology centres in will be presented. Current and planned activities in various states and organisations which are aimed at improving the implementation of smoking cessation care will also be presented

**Impact on practice or Results:** The data will also be considered in the context of past implementation efforts and challenges with smoking cessation care in non-oncology settings in Australia. The data will be synthesised using implementation science frameworks to describe the challenges and opportunities and potential avenues for success implementing change.

**Discussion or Conclusions:** Despite the long-standing, clear and specific challenges regarding implementing smoking cessation care in tertiary

settings, it is argued that the available data and knowledge from implementation science offers potential for more rapid and successful translation of evidence into practice in the oncology setting.

### 213 | Psychometric Properties of the Chemotherapy Induced Peripheral Neuropathy Assessment Tool (CIPNAT) in Korean Women with Breast Cancer

*Mijung Kim, Mi Sook Jung, Kyungin Cha, Eunyoung Park, Hyun-E Yeom, Jiyeon Lee*

*Chungnam National University, Daejeon, Korea, Republic of*

**Background/rationale or Objectives/purpose:** Neuropathy is a common neurotoxic side-effect of chemotherapy, with a high incidence rate ranging more than 85% and impact on daily activity performance. The Chemotherapy Induced Peripheral Neuropathy Assessment Tool (CIPNAT) is recommended as a well-designed tool in detailed evaluation of severity, distress, occurrence, and frequency of neuropathic symptoms and interference with abilities to properly daily tasks. The purpose of this study was to examine the psychometric properties of the CIPNAT in women treated for early-stage breast cancer.

**Methodology or Methods:** Data from 207 chemotherapy-treated breast cancer survivors were analyzed. The factor structure and construct validity were evaluated by performing exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Multitrait-multimethod matrix which is how a measure relates to other measures was used to test concurrent and discriminant validity. The reliability of the measure was examined with Cronbach's alpha coefficients.

**Impact on practice or Results:** Ten factors extracted with EFA accounted for 75.45% of the extracted variance and supported by CFA ( $\chi^2/df = 2.139$ , NFI = .814, TLI = .882, CFI = .891, GFI = .678, RMSEA = .072). Multitrait-multimethod matrix showed a strong relationship between CIPNAT and Chemotherapy Induced Peripheral Neuropathy-20 ( $r = .67$ ), and a weak relationship between CIPNAT and Breast Cancer Prevention Trial Symptom Checklist ( $r = .36$ ). Internal consistency reliability ranged from .90 to .94 for all factors.

**Discussion or Conclusions:** This finding demonstrated that the CIPNAT is a valid and reliable subjective measure of CIPN and suggested the importance of including this measure of CIPN into cancer research and practice, leading to a more comprehensive evaluation and intervention to reduce functional impact and improve quality of life.

### 175 | Translational psycho-oncology: Neurally regulating cancer with propranolol by inhibiting stress-related gene expression profiles associated with adverse cancer outcomes

*Jennifer Knight, J. Douglas Rizzo, Parameswaran Hari, Anita D'Souza, Brent Logan, Mehdi Hamadani, Saurabh Chhabra, Binod Dhakal, Nirav Shah, Steve Cole*

*Medical College of Wisconsin, Milwaukee, USA*

**Background/rationale or Objectives/purpose:** Purpose: Stress adversely impacts cancer outcomes through beta-adrenergic regulation of cancer-associated molecular pathways. We previously demonstrated that hematopoietic cell transplant (HCT) patients exposed to socioeconomic stress show activation of the beta-adrenergically mediated conserved transcriptional response to adversity (CTRA) transcriptome profile; CTRA expression was in turn associated with increased relapse and decreased disease-free survival. Therefore, we conducted a randomized controlled trial evaluating whether the beta-adrenergic antagonist propranolol decreases CTRA profiles among autologous HCT recipients with multiple myeloma.

**Methodology or Methods:** Methods: Propranolol was administered for one week pre-transplant and 4 weeks following transplant. Blood was collected at baseline, Day -2 (prior to transplant), and Day +28. Intention-to-treat analyses controlling for demographic characteristics,

high-risk disease, and tumor stage assessed effects on a 53-gene CTRA indicator profile and measures of CTRA-related cellular processes.

**Impact on practice or Results:** Results: 12 participants were randomized to the intervention group and 13 to the control arm. Relative to the control group, propranolol-treated patients showed greater decreases from baseline (no propranolol) to Day -2 and Day +28 for CTRA gene expression ( $p = .017$ ). Propranolol-treated patients also showed relative up-regulation of hematopoietic stem cell-containing CD34+ cells ( $p = .011$ ) and down-regulation of myeloid progenitor-containing CD33+ cells ( $p = .001$ ).

**Discussion or Conclusions:** Conclusions: Propranolol inhibits adverse gene expression changes associated with stress-related cancer progression. Its use as a novel adjunct in cancer treatment could diminish adverse medical outcomes associated with chronic stress, providing an innovative treatment option in optimizing current cancer care to mitigate worldwide social health disparities. Ongoing follow-up and future replication studies will be required to assess impacts on clinical outcomes.

### 12 | A Smartphone Self-Management Program to Support Oral Chemotherapy Adherence in Young And Adult Cancer Patients: Design and Development

*Xiomara Skrabal Ross<sup>1,2</sup>, Kate M Gunn<sup>1</sup>, Pandora Patterson<sup>3,4</sup>, Ian Oliver<sup>1</sup>*

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*<sup>4</sup>Canteen Australia, Research, Evaluation and Policy Team, Sydney, Australia*

**Background/rationale or Objectives/purpose:** Cancer patients are responsible for self-administering oral chemotherapy under limited hospital monitoring but adherence rates can be as low as 16%. Mobile phone-based interventions seem to increase medication adherence in other chronic diseases, but more evidence on whether these types of interventions support oral chemotherapy adherence is needed. Findings from the research-based process of development of a novel intervention are described.

**Methodology or Methods:** The design process consisted of an extensive literature review of the main reasons for oral chemotherapy non-adherence, a scoping review to examine what was known about available oral chemotherapy adherence-enhancing interventions delivered via mobile phones, semi-structured interviews with 9 oral chemotherapy users (ages 20 to 71 y/o) to explore their preferences on the structure of the self-management program, and collection of information from oncology health professionals (clinicians, nurses and pharmacists). The intervention design follows Darlow and Wen's 8 best practices for developing mobile health interventions.

**Impact on practice or Results:** Main reasons for oral chemotherapy non-adherence were identified: side-effects, forgetfulness and poor treatment knowledge. The scoping review highlighted high acceptability and satisfaction with the available mobile phone-based interventions as well as the relevance of using a design framework, including end users engagement. Findings from the qualitative study and information collected from health professionals informed the structure of the program (e.g. timing, content, delivery methods).

**Discussion or Conclusions:** The developmental process of the self-management program can be used as guide in the design of future medication-adherence mobile health interventions in cancer and other chronic diseases. A proof-of-concept study will follow the development phase.

## W. OTHER

### 710 | Towards more empowered and activated patients

*Linda Eagen, Melina Ladouceur, Bonney Elliott, Patricia Barrett-Robillard*

*Ottawa Regional Cancer Foundation, Ottawa, Canada*

**Background/rationale or Objectives/purpose:** Health care professionals play an important role in supporting patients and are in a unique position to



increase patient activation. In response to the increased demands on patients to manage their care, the Ottawa Regional Cancer Foundation launched Cancer Coaching in 2011. Cancer Coaching is offered by licensed health-care professionals and is founded on a growing body of evidence that indicates that health coaching, in clinical trial settings, outperforms other forms of advice giving in 80% of cases and leads to better care, better health and better value.

In this workshop, participants will learn simple, evidence-based strategies to activate patients, to increase self-efficacy and improve self-management skills. We will demonstrate ways of working efficiently and effectively with patients to quickly identify their personal and primary motivations to change and make that critical shift from thinking to doing.

**Methodology or Methods:** We use the evidence-based Patient Activation Measures survey with clients. Patient activation is defined as an individual's knowledge, skill, and confidence for managing their health. Increased patient activation translates into better health outcomes and lower healthcare costs. A single point change correlates to a 2% decrease in hospitalization and 2% increase in medication adherence.

**Impact on practice or Results:** The more than 3,500 individuals we have served to date report: 97%: "I am better able to cope with life" and 93%: "I am more confident that I can do something about my cancer and well-being"

**Discussion or Conclusions:** Whether you have five minutes or thirty minutes with patients, we can all make small shifts in our practice that show results.

## 706 | Working group of Psychooncology in the frame of a Psychologist Association

*Tania Estapé<sup>1,2</sup>, Núria Gondón<sup>1,3</sup>*

<sup>1</sup>Working Group of Psychooncology in the Catalan College of Psychologists, Barcelona, Spain; <sup>2</sup>Fefoc Fundació, Barcelona, Spain;

<sup>3</sup>Hospital ESperit Sant, Santa Coloma de Gramenet, Spain

**Background/rationale or Objectives/purpose:** At the Psychologists College of Catalonia, the Clinic and Health Psychology section has launched special interest groups being one of them a group of Psychooncology that is currently 20 years old. Objectives: present a summary of the goals that have been established in the working group

**Methodology or Methods:** Methods: Review of activities carried out and future strategy

**Impact on practice or Results:** Results: we have done some tasks: Promotion of the discipline: documents to disseminate Psychooncology: 1) Submitted to Catalan Parliament to inform politicians about the need of including psychosocial aspects in usual care 2) A leaflet containing purposes of Psychooncology and needs from patients, spread among health centers 3) A handbook on Psychooncologist role: published among a collection defining different specialties. It contains an analysis on training to be a psychooncologist, theoretical frameworks and main problems from cancer occurrence. Training courses: to Psychologists that want to work on psychooncology: 1) Master in Psychooncology: with Barcelona University to train Psychologists. It included a first year to introduce Psychosocial aspects of Cancer and a second year devoted to intervention skills. 2) Communication Skills courses: using simulation we done courses to improve communication skills to deal with breast cancer survivors 3) Denial in Psychooncology: a theoretical introduction and a clinical case to work on the management of denial 4) Assessment: on a theoretical and practical basis. Invited talks: sound professionals on a special topic: 1) Genetic counselling 2) Presentation of a book.

**Discussion or Conclusions:** Conclusions: our working group is willing to improve awareness on Psychooncology, and to train psychologists on assessment and treatment in cancer patients and their relatives

## 701 | Adaptive Spiritual and Religious Coping in Newcomers with Cancer: A Synthesis of the Literature

*Maryam Qureshi, Anusha Kassan*

*University of Calgary, Calgary, Canada*

**Background/rationale or Objectives/purpose:** Newcomers or immigrants with cancer more often integrate spiritual/religious coping strategies than the general population, which psychologists may not be adequately aware of in practice. This scoping review will outline spiritual and religious coping strategies that immigrants may use for empowerment through their cancer journey.

**Methodology or Methods:** This is a scoping review of the literature in psychology, nursing, social work, spiritual care, and palliative care, using keywords such as: immigrant, religion, spirituality, and coping, etc. Databases being used include: Psycinfo, Pubmed, and Proquest. Articles with relevant abstracts are being included, and screened again after reading in full, and the references for each article are also being searched

**Impact on practice or Results:** Preliminary results include the following categories of positive religious/spiritual coping: (1) using fatalism (which is often misunderstood in psychology) while seeking treatment, (2) acceptance of one's condition to reduce anxiety of the future and death, (3) using scripture and prayer to increase hope and trust, (4) viewing illness as a test rather than a punishment, (5) viewing illness as a positive experience/post-traumatic growth due to increased connection with faith/spirituality.

**Discussion or Conclusions:** The limited in-depth knowledge relevant to newcomers/immigrants in the cancer care system highlights an important area for growth that is needed for psychologists to practice multicultural competence and sensitivity.

## 655 | Cancer-Related Distress and Cost of Care Concerns among a Community-Based Sample of Individuals with Cancer

*Pierre Gardan, Shauna McManus, Melissa Miller, Alexandra Zaleta, Julie Olson, Kevin Stein*

*Cancer Support Community, Research and Training Institute, Philadelphia, USA*

**Background/rationale or Objectives/purpose:** Cancer survivors are at risk for financial burden due to substantial cost-of-care. We examined the relationship between patients' cost-of-care experiences and psychosocial distress.

**Methodology or Methods:** 3,318 individuals diagnosed with cancer enrolled in the Cancer Experience Registry<sup>a</sup>, provided demographic, clinical, and cost-of-care information, and completed CancerSupport-Source<sup>a</sup>, a 25-item distress screening tool including depression and anxiety risk subscales. We used logistic regression to predict odds of anxiety/depression risk by cost-of-care concerns, controlling for demographic/clinical variables significant in bivariate analyses.

**Impact on practice or Results:** Participants were 75% female; 85% non-Hispanic-white; mean-SD age = 57.6–12.1 years. 24% reported annual income <\$40K; 24% \$40–79K; 52% ≥\$80K. 24% spent >\$500-mo out-of-pocket. Due to cost-of-care: 32% depleted savings, 22% used pharmaceutical assistance programs, 18% borrowed against/used retirement savings, 15% applied for/used public assistance; participants sometimes-always postponed: seeking psychological counseling (22%); doctor's appointments (11%); filling prescriptions (11%); follow-up screening/blood-work (9%); 8% skipped prescription dosages. 44% reported moderate-to-very-serious concern about health insurance/money worries. Higher out-of-pocket costs were associated with odds of anxiety ( $p < .001$ ) and depression ( $p < .05$ ) risk; associations were significantly mediated by concerns about health insurance/money worries ( $ps < .001$ ). Additionally, postponing psychological counseling predicted anxiety ( $p < .001$ ) and depression ( $p < .001$ ) risk odds.

**Discussion or Conclusions:** Higher out-of-pocket costs predict increased concern about health insurance/money worries, which in turn predicts odds of anxiety/depression risk. Additionally, postponing psychological counseling to reduce cost-of-care predicts anxiety/depression risk odds. These findings demonstrate need for doctor-patient cost-of-care

communication and financial counseling to mitigate impact on quality-of-life, treatment, and health outcomes.

#### 445 | 'I'm not there yet': The Experience of Palliative Care from the Perspective Adolescents and Young Adults (AYA) with Advanced Cancer

*Jonathan Avery<sup>1</sup>, Alisha Kassam<sup>2</sup>, Amirtha Srikanthan<sup>3</sup>, Pamela Mosher<sup>1</sup>, Ahmed Al-Awamer<sup>1</sup>, Norma D'Agostino<sup>1</sup>, Camilla Zimmerman<sup>1</sup>, Yan Castaldo<sup>1</sup>, Mahsa Samadi<sup>1</sup>, Adrian Thavaratnam<sup>1</sup>, Seli Tam<sup>2</sup>, Abh Gupta<sup>1</sup>*

<sup>1</sup>University Health Network, Toronto, Canada; <sup>2</sup>Hospital for Sick Children, Toronto, Canada; <sup>3</sup>The Ottawa Hospital, Ottawa, Canada  
**Background/rationale or Objectives/purpose:** AYA (defined as 15 to 39 years of age) with advanced cancer are a group for whom an age-appropriate focused approach to palliative care has not been developed. The purpose of this study was to explore the illness experience of AYA referred to palliative care to understand a) how palliative care is understood; and b) how/when to provide palliative in this population.

**Methodology or Methods:** Using an interpretive descriptive design, semi-structured interviews were conducted with 12 AYA with advanced cancer referred to an outpatient palliative care clinic at a tertiary cancer centre in Toronto, Canada. Interviews explored participants understanding and experiences receiving palliative care. Family members were also interviewed (n = 3). Data collection and analysis is occurring concurrently. Constant comparative analysis using theoretical sampling was chosen to analyze the data.

**Impact on practice or Results:** Preliminary results demonstrate that a referral to palliative care was a distressing experience because of the association between palliation and end of life (EOL). 'I'm not there yet' has emerged as a possible core category illustrating that a referral primed AYA to think about a possible reality they were not ready to approach. Embedded within this experience are two themes that describe how/when to provide palliative care: 1) Removing the stigma; 2) Creating space and time.

**Discussion or Conclusions:** These early results describe increased social isolation and stigmatization for AYA with advanced cancer who are in palliative care because of the association between palliation and EOL. Eliminating this dichotomous relationship is fundamental to successful palliative care in this population.

#### 441 | Using Attachment Theory to investigate distress among partners of ovarian cancer patients and their relationship with the patients' healthcare providers

*Danielle Petricone-Westwood<sup>1,2</sup>, Sarah Hales<sup>2</sup>, Jacqueline Galica<sup>1</sup>, Sophie Lebel<sup>1</sup>*

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**Background/rationale or Objectives/purpose:** The typically late stage diagnosis and frequent recurrences of ovarian cancer (OC) present unique challenges for patients' caregivers. Evidence suggests that the relationship these caregivers have with the patients' healthcare providers (HCP) can influence symptoms of depression and anxiety (DA). As attachment insecurity is known to predict DA in the general population, we are investigating the role of attachment to understand the connection between the HCP relationship and DA. We hypothesize that the connection between attachment and DA will be mediated by the HCP relationship.

**Methodology or Methods:** We designed a cross-sectional, correlational questionnaire study. To achieve adequate power, we proposed a target sample of 118 participants (n = 29 recruited by March 2019). We recruited partner-caregivers through Ovarian Cancer Canada, various Canadian cancer support centres, and in gynecology-oncology clinics in Kingston and Toronto. Our questionnaires measured: sociodemographic and OC patient medical information; OC patient quality of

life; attachment security; perceived attention from HCP; and symptoms of DA. Hypotheses will be tested using linear regression analyses and Bootstrapping.

**Impact on practice or Results:** This presentation will provide preliminary results including descriptive statistics, correlations between attachment and DA, and results testing our mediation model. We will discuss some of the methodological challenges that arose.

**Discussion or Conclusions:** This study will highlight how the HCP can influence the partner's DA and further the discussion of how caregivers should be integrated into cancer treatment centres. It will provide a potential area of focus when working clinically with these partners who may have difficulty managing DA-related symptoms throughout the patient's cancer trajectory.

#### 438 | Recognition of nursing care in terminal cancer patients in the general wards

*Kazumi Ueno<sup>1</sup>, Aya Kodama<sup>2</sup>, Yui Fukushima<sup>3</sup>, Ryou Date<sup>4</sup>*

<sup>1</sup>Nagasaki University, Nagasaki, Japan; <sup>2</sup>Kokura Memorial Hospital, Kitakyushu, Japan; <sup>3</sup>Fukuoka University Hospital, Fukuoka, Japan;

<sup>4</sup>National Hospital Organization Kyushu Cancer Center, Fukuoka, Japan

**Background/rationale or Objectives/purpose:** To study to clarify about how to relation the terminal cancer patients recognized by nurses in general wards.

**Methodology or Methods:** We conducted a self-report questionnaire survey created in accordance to the previous studies for nurses working in general wards with high frequency of terminal cancer patients at the A hospital.

The subjects of the study were 144 nurses (mean years of experience:  $8.3 \pm 7.81$  years).

**Impact on practice or Results:** There were 126 experienced nurses involved with end-of-life cancer patients who received a life-long notice. More than 90% of the nurses responded that they needed to know what patients wanted, what support to live, what is the spirit, etc. On the other hand, it was difficult to respond to the patients and their families. In addition, it was even more difficult to respond to the patients who appealed "I want to die" and such statements were received from more than 90% of the nurses. When compared in terms of years of experience (median: 6 years), significant difference was observed in terms of communication ( $p = 0.03$ ) on subscale and coping with patient's distress ( $p = 0.02$ ).

**Discussion or Conclusions:** The nurses were communicating with patients, but regardless of how many times I experienced a patient's suffering experience, I cannot feel the satisfaction or accomplishment from the difficulty or complexity. Regardless of the number of years of experience, it is always necessary to have opportunities to look back on nursing and to share the learning from successful and failure experiences, and gain knowledge.

#### 429 | The effectiveness of communication skill training on shared decision making for medical students in Taiwan

*Woung-Ru Tang<sup>1,2</sup>, Chun-Kai Fang<sup>3</sup>, Hung-Hsueh Chou<sup>4</sup>*

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**Background/rationale or Objectives/purpose:** Background/ Purpose: Shared decision making is a crucial component of good clinical practice. A communication skill training (CST) model, as based on the three talk model (Elwyn, 2017) which emphasized on team talk, option talk, and decision talk has not been tested from medical students' viewpoints. Therefore, the author's motivation to conduct this study is triggered.

**Methodology or Methods:** Methods: A one group before and after model design was conducted. Two hundred ninety-eight medical students participated in the study and received 3 hours CST under the guidance of qualified facilitators and simulated patients (SP). CST training included lecture, role play, and discussion. This study used COMRADE to measure students' satisfaction and confidence on shared decision making. Data were collected before CST (baseline) and immediately after CST. In addition, facilitators and simulated patients rated students' performance during role plays by using Collaborate and OPTION<sup>5</sup>.

**Impact on practice or Results:** Results: Medical students in the post test had more satisfaction with communication and better confidence with decision than in the pretest ( $p < .001$ ). Moreover, students had higher score on Collaborate and OPTION<sup>5</sup> in the second role play than in the first role play ( $p$ )

**Discussion or Conclusions:** Conclusion: CST based on three talk model can improve medical students' confidence and their abilities of shared decision making during the deliberation process. However, more rigorous studies are required to test the effectiveness of CST using objective method such as Roter interaction analysis system.

### 377 | Building the capacity for psychosocial oncology research: A survey of the International Psycho-Oncology Society research network

Sylvie Lambert<sup>1,2</sup>, Nicholas J Hulbert-Williams<sup>3</sup>, Joanne Shaw<sup>4</sup>, Chelsea Coumoudouros<sup>5</sup>

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**Background/rationale or Objectives/purpose:** This study aimed to identify the research needs and priorities among members of the International Psycho-Oncology Society (IPOS).

**Methodology or Methods:** An online, cross-sectional survey was distributed to all registered members of IPOS via email. Data were collected using the online survey platform SimpleSurvey and analyzed using Stata. High priority research needs were identified as the largest gaps between respondent's skill level and perceived importance of research tasks.

**Impact on practice or Results:** 142 IPOS members completed the survey. Participants represented over 40 countries and ranged from early career researchers/clinicians to highly experienced professionals. Overall, participants reported spending an average of 17.3 hours per week on research (range = 0 to 80 hours per week), with 69% of respondents wanting to increase their research involvement. The main barriers to research participation included lack of time (63%) and research funding (80%). IPOS members identified five high priority training needs: (1) qualitative research methods, (2) community-based participatory research, (3) working with decision makers/policy-makers, (4) writing grant applications and (5) preparing budgets for research projects. Participants suggested funding access, statistical advisors and networking and mentorship opportunities as ways to enhance research participation. Members preferred online training modules (39%), mentorship programs (19%) or workshops prior to IPOS meetings (17%) as methods by which IPOS could provide research support. Facilitation of networking was viewed as a key role for IPOS (94%).

**Discussion or Conclusions:** IPOS has an important role in supporting capacity building among members. This survey provides an agenda for workshops and training opportunities to alleviate barriers to research participation.

### 310 | Title: To design a tool to measure cancer awareness amongst adult cancer patients and their accompanying personnel attending out patient department at Cancer Research Institutes in India

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**Background/rationale or Objectives/purpose:** At present, there are no standardized guidelines or scales used in India to measure cancer awareness. This study aims to design a tool to measure the prevalence of cancer awareness which can be applied in the adult population in India.

**Methodology or Methods:** Study is conducted at 2 cancer units of HCG at Nagpur, India.

An internationally validated scale, cancer awareness measurement (CAM) has been modified according to Indian settings and used as a reference. The tool is administered to the respondent participants [patients and their accompanying personnel] during their first interaction with the psycho-oncology team.

**Impact on practice or Results:** Manual assessments followed by electronic data entry is done for at least 600 subjects. Data will be coded and analysed in STATA, version 10.1, 2011 and final scoring results would be available by end of May 2019. A pilot analysis was conducted to assess consistency of the scale and each and every item (question) taking a mid-sample of 100 subjects from the study population. Internal consistency of devised instrument assessed with Cronbach's alpha ( $\alpha = 0.73$ ) was found to be fairly good. Item analysis of individual questions also reveals a satisfactory consistency (reliability coefficient ranging from 0.68 to 0.74) among the scale items.

**Discussion or Conclusions:** Simple measuring tool to measure cancer awareness will be made available to the medical and non-medical staff in India. The target population can be identified for implementing focused strategies to impart more effective outreach services through awareness lectures, distributing education material and organizing screening camps that will in reducing cancer burden by early detection and early interventions.

### 247 | Bibliometric study of Psycho-Oncology literatures based on Web of Science

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**Background/rationale or Objectives/purpose:** This study was to conduct a historical review of psycho-oncology literatures, and to understand the formation, distribution, development and hotspots in psycho-oncological researches around the world.

**Methodology or Methods:** The literature was searched in core collection database of Web of Science (1958–2019) by using the following terms: "psycho oncology" OR "psychosocial oncology" OR "oncology, psychosocial" OR psychooncology OR psycho-oncology. The searching results were analyzed by the VOSviewer software, in an effort to discover psycho-oncology progress all over the world.

**Impact on practice or Results:** The literature search yielded 1709 bibliographic records. The annual number of psycho-oncology articles had large change from 1990 s to 2019. The US, England, Canada etc. played the leading role in the psycho-oncological research in the world. The three authors or organizations with the greatest



total link strength, were Dr. Luigi Grassi (University of Ferrara), Dr. Tatsuo Akechi (University Graduate School of Medical Sciences) and Dr. Rosangela Caruso (University of Ferrara), respectively, and University of Newcastle, Sydney and Queensland, respectively. Except psycho-oncology and cancer, quality-of-life, depression, breast-cancer were the most keywords of psycho-oncology research in the world. Furthermore, Psychooncology, Supportive Care in Cancer, Journal of Psychosocial Oncology and Cancer etc. were the most published journals. Meanwhile, the three most cited references were Zabora J, et al., 2001, Stern AF, et al., 1983, and Mitchell AJ, et al., 2011, respectively.

**Discussion or Conclusions:** This is the first and the largest, bibliometric study of psycho-oncology literatures based on Web of Science, allowing us to pick up the past, or tilt us towards the future in psycho-oncology research area.

## 222 | Transfer of communication skills into clinical practice – a new coaching concept after a communication skills training. Multilevel evaluation of a RCT

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**Background/rationale or Objectives/purpose:** Most communication skills training (CST) have been evaluated in standardized assessments. Little is known, how to transfer acquired skills into clinical practice. Thus, we developed a new coaching concept to support this transfer. Here, we compare the effects of the coaching evaluated by external raters and physicians' self evaluation.

**Methodology or Methods:** 72 oncologists were trained in a CST, afterwards randomized to one coaching session (CG) or an elaborated coaching with four sessions (IG). Coaching was based on video analysis of real patient encounters. For research assessment blinded raters evaluated 430 video-recorded consultations with real patients before coaching (t1) and after coaching (t2) with a rating scale. 0Questionnaires assessed physicians' self-evaluation using equivalent items as on the rating scale. (1) Primary outcome was the comparison of communication skills between IG and CG assessed by external raters. (2) Secondary outcome was the comparison of physicians self-evaluation.

**Impact on practice or Results:** (1) IG showed a statistically significant improvement (pall items, starting conversation, assessing patient's perspective and general communication skills. Compared to CG they showed a significant advantage in the domains: all items (p = .04). (2) The IG showed a significant improvement in self-evaluation in 6 out of 7 domains including overall evaluation (p = 0.006) and a greater increase in 5 out of 7 domains, when compared to CG (all items: p = 0.03)

**Discussion or Conclusions:** The new coaching supports physicians in the transfer of skills into real practice. The question will is on how to evaluate communication skills trainings and discuss multilevel evaluation.

## 220 | Assessing measurement invariance of the EORTC QLQ-C30

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**Background/rationale or Objectives/purpose:** When using a questionnaire for group comparison, it is important that members of different groups assign the same meaning to the items of that questionnaire. Only when the assumption of measurement invariance (MI) is met, group differences can be considered true differences. We aim to investigate MI in the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30) in a heterogeneous group of cancer patients.

**Methodology or Methods:** Data from 12 studies within the PROFILES registry were used for secondary data analyses (N = 7,500), which included data from approximately 300 cancer patients in their last year of life. Configural, metric, scalar, structural, and full uniqueness MI between subgroups based on primary cancer sites, age, sex, time since diagnosis, and cancer survivors versus cancer patients in their last year of life were explored by means of (multi-group) Confirmatory Factor Analysis. Single-item scales were excluded from the models.

**Impact on practice or Results:** Full uniqueness MI of the QLQ-C30 was established between all subgroups considered in this study and all MI models had an adequate to good fit (CFI>.95; TLI>.95; RMSEA<.05).

**Discussion or Conclusions:** Our results suggest that comparing QLQ-C30 scores between subpopulations as operationalized in our study is valid. Further research into MI between other subgroups, such as treatment effects and ethnicity is warranted. We stress the importance of including MI evaluations in the development and the validation of measurement instruments. Also, the development of an adequate criterium for fit interpretation of MI test results should receive specific attention

## 19 | Prevalence and factors associated with major depressive disorder in children and adolescents with cancer in Uganda

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**Background/rationale or Objectives/purpose:** BACKGROUND: The prevalence and factors associated with major depressive disorder (MDD) in adults with cancer in poor resource settings have been described in the scientific literature. However, information on depression in children and adolescents(C&A) with cancer is limited.

**Objective:** To determine the prevalence and factors associated with MDD in C&A attending the Uganda cancer institute (UCI) outpatient clinic (OPC).

**Methodology or Methods:** Three hundred fifty-two children and adolescents were screened for MDD using the Child Depression Inventory (CDI) and evaluated with the MINI-KID Depression module that assessed current and lifetime depressive disorders. Associated factors were assessed using a standardized child and caregiver socio-demographic questionnaire, that included questions from a life events checklist, the coping inventory, and the multidimensional perceived social support questionnaire. Multiple logistic regression models were used to determine factors independently associated with MDD.

**Impact on practice or Results:** Of the 352 children and adolescents recruited in the study 91(26%) met criteria for MDD. Of those with depression, 59 (64.8%) had mild depression and 30(33%) had moderate

depression. Protective factors against MDD were having a special person in the respondent's life ( $p = 0.01$ ) and using self-distraction as a coping method ( $p = <0.001$ ). Risk factors were; adolescent age ( $p = 0.005$ ), residing in Eastern Uganda ( $p = 0.01$ ), having a married/cohabiting caregiver ( $p = 0.04$ ) and having a widowed caregiver ( $p = 0.02$ ).

**Discussion or Conclusions:** The prevalence of MDD in children and adolescents with cancer is substantial. Given that the majority had mild-moderate depression, first-line treatments for depression should be integrated into the routine care of children and adolescents with cancer.